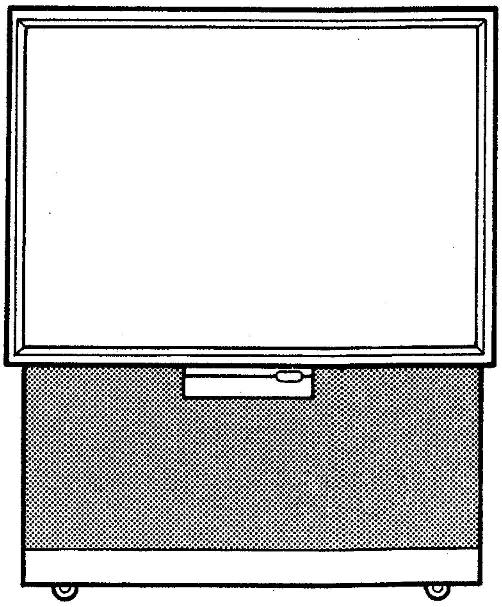
SERVICE DATA
FILE NO. 050-638
NTSC 3.58 SYSTEM

TOSHIBA

PROJECTION TELEVISION

TP48C50:TP48C51:PJ48C50

(TAC9390) (TAC9390) (TAC9390)



SPECIFICATIONS

TELEVISION SYSTEM:	NTSC standard
CHANNEL COVERAGE:	VHF; 2 through 13 UHF; 14 through 69 Cable TV; mid band (A-1 through A-8, A through I) super band (J through W) hyper band (AA through ZZ, AAA, BBB) ultra band (65 through 94, 100 through 125)
POWER SOURCE:	120V AC, 60Hz
POWER CONSUMPTION:	254W (average)
AUDIO POWER:	14 watts + 14 watts
SPEAKER TYPE:	Two 6-1/4" (160 mm)
VIDEO/AUDIO TERMINALS:	S-VIDEO INPUT (VIDEO 1/VIDEO 3) Y-INPUT: 1Vp-p, 75 ohm, negative sync. C-INPUT: 0.3Vp-p (burst signal), 75 ohm VIDEO 1 / VIDEO 2 / VIDEO 3 INPUT VIDEO: 1Vp-p, 75 ohm, negative sync. AUDIO: 150mVrms. (30% modulation, 47k ohm) AUDIO / VIDEO OUTPUT VIDEO: 1Vp-p, 75 ohm, negative sync. AUDIO: 150mVrms. (30% modulation, 4.7k ohm) VARIABLE AUDIO OUTPUT 0~350mVrms. (30% modulation, 4.7k ohm) EXTERNAL SPEAKER TERMINALS Accept speakers of impedance 8 ohm, input power 14W or greater
DIMENSIONS:	Width ....41-7/16" (1052 mm) Height ....52-1/8" (1324 mm) Depth ....19-5/8" (499 mm)
WEIGHT:	220 lbs (100 kg)
SUPPLIED ACCESSORIES:	1. Remote Control Unit with 4 size "AAA" batteries 2. Antenna adapter

Design and specifications are subject to change without notice.

Printed in Japan Jul. 1993 So

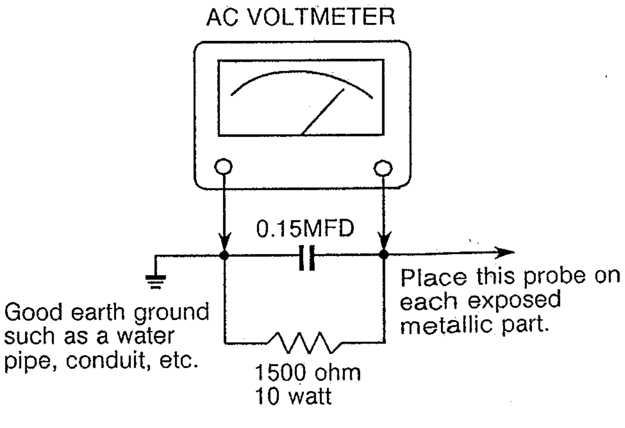
X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 31.5 kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed 32.0 kV.
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 mfd capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


AC VOLTMETER
0.15MFD
Place this probe on each exposed metallic part.
Good earth ground such as a water pipe, conduit, etc.
1500 ohm
10 watt

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

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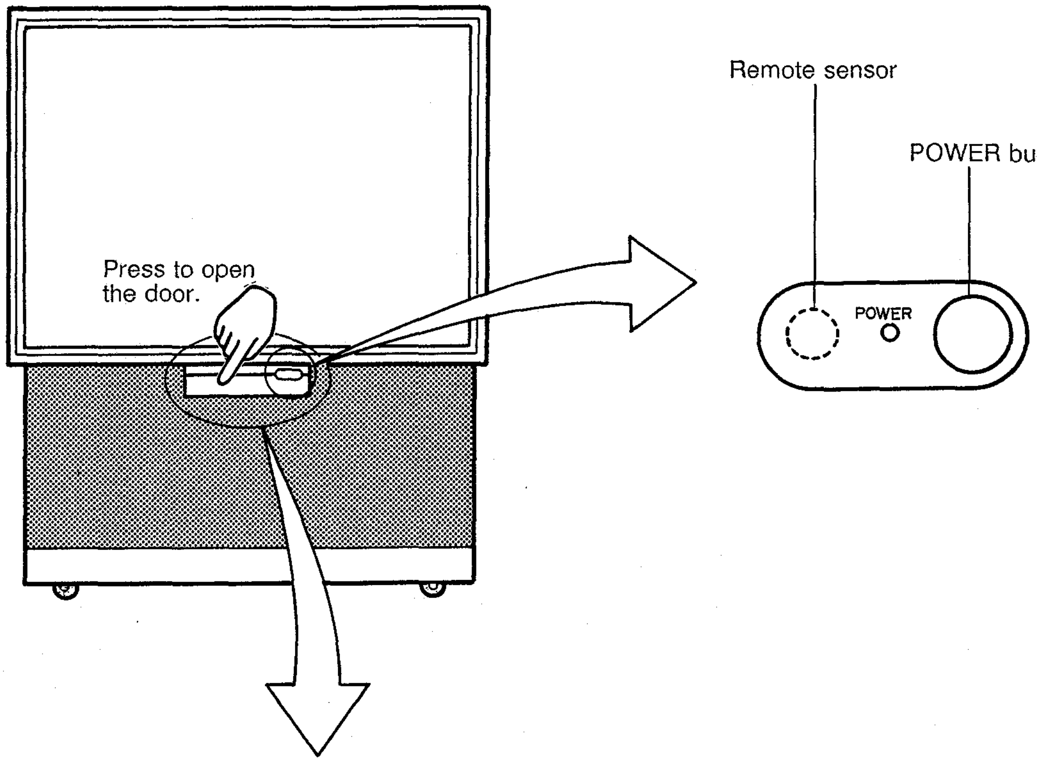
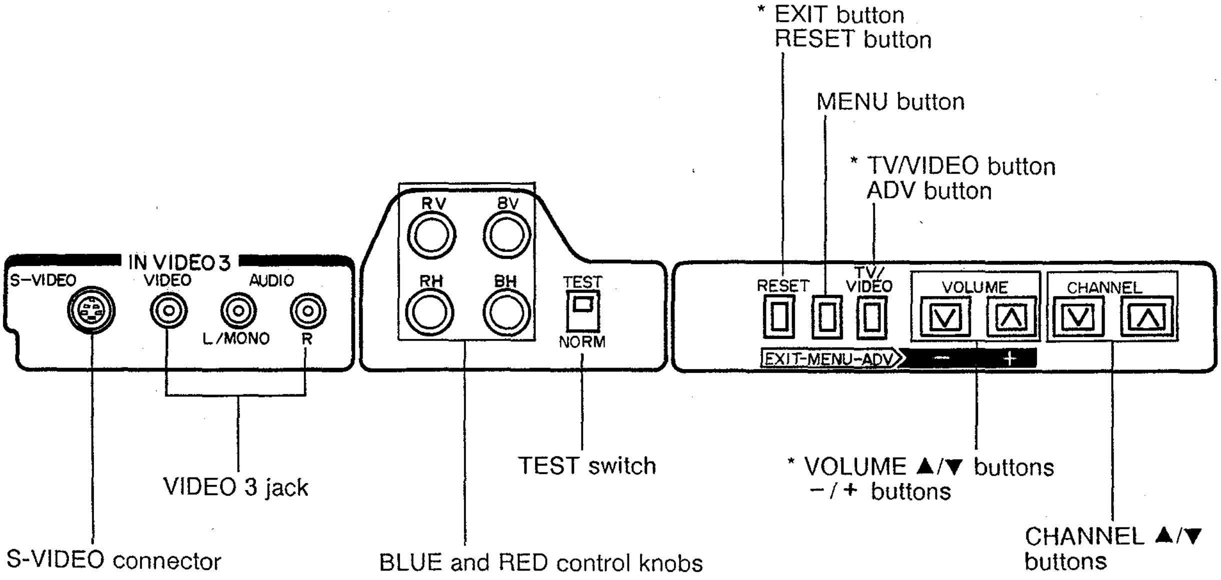
LOCATION OF CONTROLS

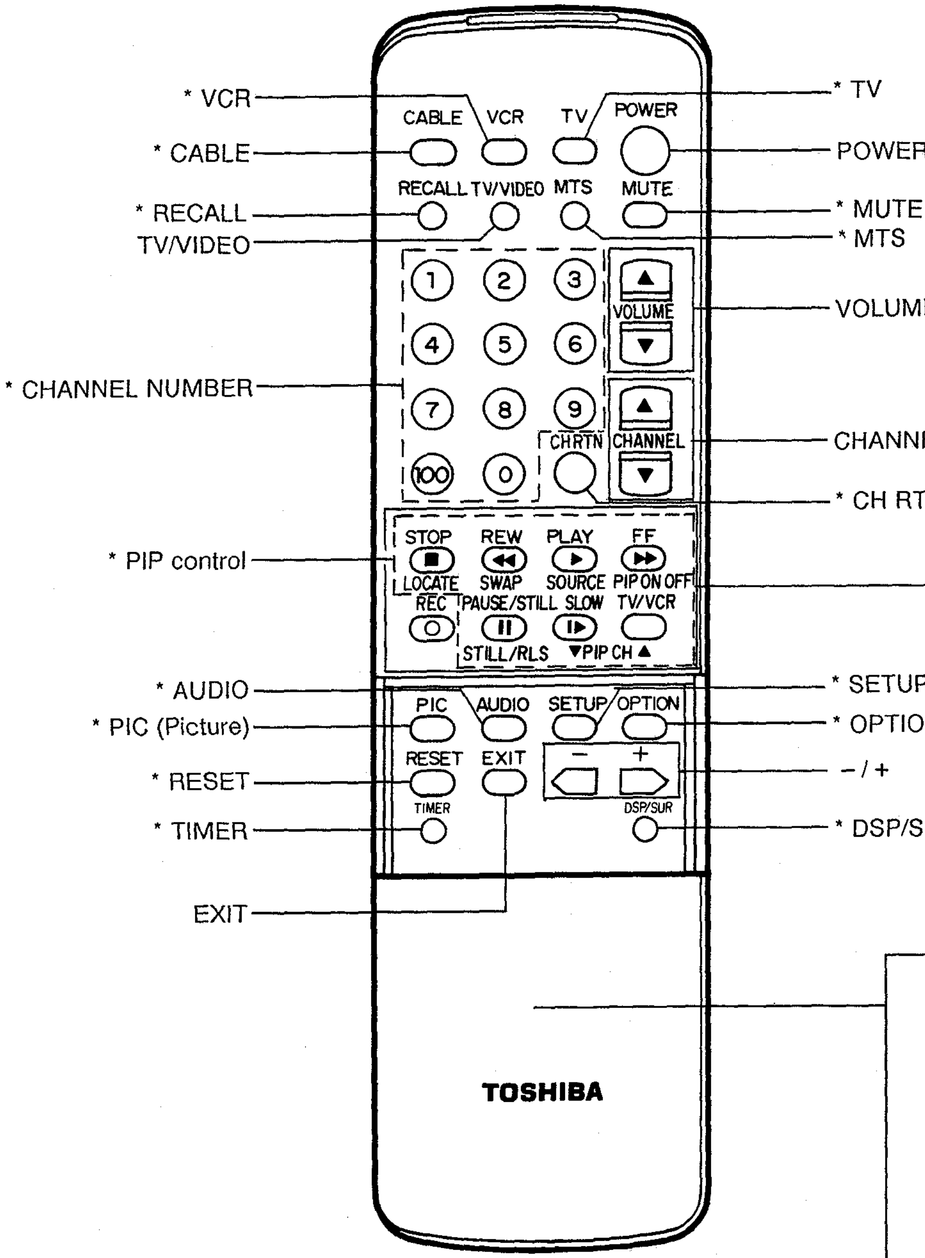

Remote sensor
POWER button
Press to open the door.
POWER

Behind the door


* EXIT button RESET button
MENU button
* TV/VIDEO button ADV button
IN VIDEO 3
S–VIDEO
VIDEO
AUDIO
L/MONO
R
RV
BV
RH
BH
TEST
NORM
RESET
TV/VIDEO
VOLUME
CHANNEL
EXIT-MENU-ADV
– +
VIDEO 3 jack
TEST switch
* VOLUME ▲/▼ buttons –/+ buttons
S-VIDEO connector
BLUE and RED control knobs
CHANNEL ▲/▼ buttons

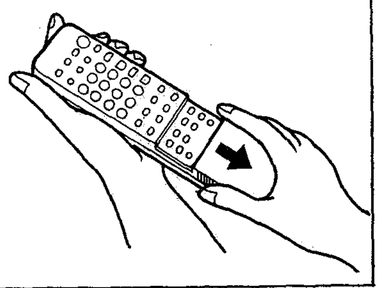
** These buttons have dual functions.*

REMOTE CONTROL UNIT


* VCR
* CABLE
* RECALL
TV/VIDEO
* CHANNEL NUMBER
* PIP control
* AUDIO
* PIC (Picture)
* RESET
* TIMER
EXIT
* TV
POWER
* MUTE
* MTS
VOLUME ▲/▼
CHANNEL ▲/▼
* CH RTN
* SETUP
* OPTION
– / +
* DSP/SUR
CABLE
VCR
TV
POWER
RECALL
TV/VIDEO
MTS
MUTE
1
2
3
4
5
6
7
8
9
100
0
VOLUME
CHRTN
CHANNEL
STOP
REW
PLAY
FF
LOCATE
SWAP
SOURCE
PIP ON OFF
REC
PAUSE/STILL
SLOW
TV/VCR
STILL/RLS
▼PIP CH ▲
PIC
AUDIO
SETUP
OPTION
RESET
EXIT
–
+
TIMER
DSP/SUR
TOSHIBA

* VCR function
- ■ STOP
- ◀◀ REW
- ▶ PLAY
- ▶▶ FF
- ○ REC
- II PAUSE/STILL
- I▶ SLOW
- ⬭ TV/VCR

To use the buttons inside the cover, slide down the cover.

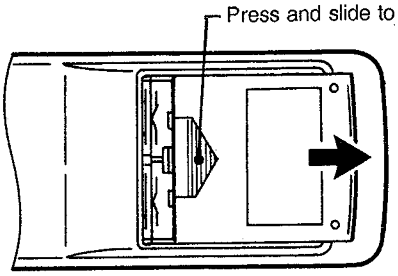


*These functions do not have duplicate locations on the TV. They can be controlled only by the Remote Control.

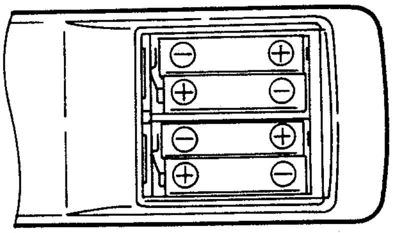
USING THE REMOTE CONTROL

BATTERY INSTALLATION

1. Place the Remote Control face down and remove the battery cover.



2. Insert four "AAA" size batteries, matching the + and – signs on each battery with the + and – signs of the battery compartment.



3. Slide the battery cover shut until the lock snaps.

CAUTION:

- Do not throw your batteries into a fire. Dispose of your batteries in a designated disposal area.
- Do not combine used batteries with new ones.
- Do not mix battery types.

TIPS FOR BEST OPERATION

- For optimum performance, aim the Remote Control directly at the TV it is being used to operate and be sure there is no obstruction between the Remote Control and the TV.
- The battery life should be about one year under normal use.
- When the remote control will not be used for a long period of time or when the batteries are worn out, remove the batteries to prevent leakage.
- Do not drop, dampen or disassemble the Remote Control.

TO CONTROL EQUIPMENT

To control	First press	You can use
TV	TV button	all the buttons **except** CABLE, VCR, REC buttons.
VCR	VCR button	● POWER button ● CHANNEL ▲/▼ buttons ● CHANNEL NUMBER buttons ● VCR function buttons
Cable TV Converter	CABLE button	● POWER button ● CHANNEL ▲/▼ buttons ● CHANNEL NUMBER buttons

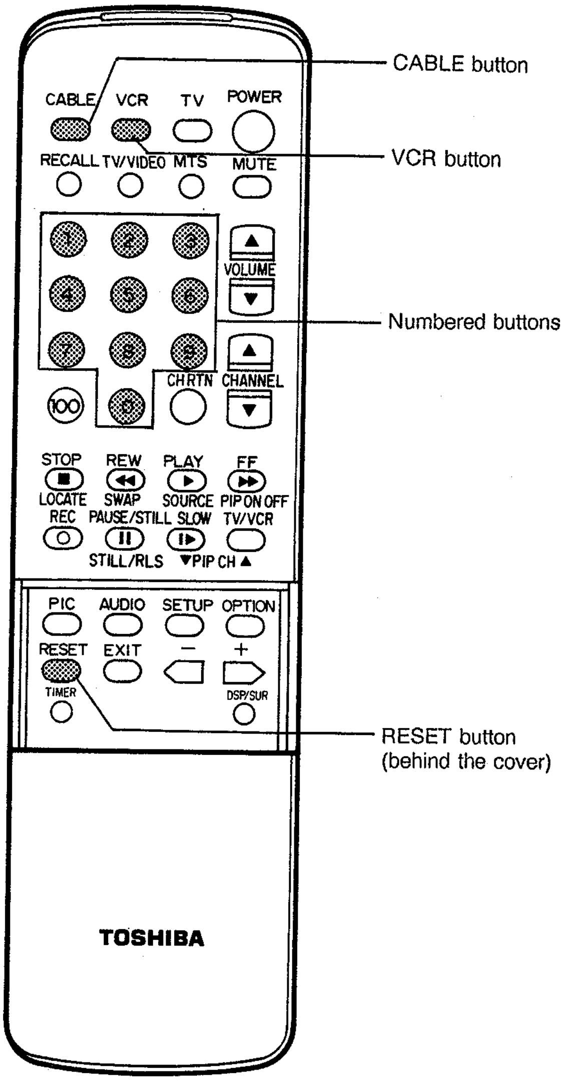
- This Remote Control may have functions not available on the original remote control.
  These functions may or may not operate with your VCR or cable TV converter. Refer to the owner's manuals supplied with the equipment to see which functions are available.

- The VOLUME ▲/▼ and MUTE buttons always control the TV regardless of the CABLE, VCR or TV button position.
  When using these buttons, aim the Remote Control at the TV.
  If your cable TV converter has a volume control, adjust it for maximum volume level. Then adjust the volume using the VOLUME ▲/▼ buttons on this Remote Control.

PROGRAMMING THE REMOTE CONTROL UNIT

TO PROGRAM THE REMOTE CONTROL

Before using this Remote Control, it must be programmed to recognize the brands of the VCR and the cable TV converter box it will be used to operate.
If you are using a TOSHIBA VHS VCR, it has already been programmed. If not, follow the steps below.


CABLE button
VCR button
Numbered buttons
RESET button
(behind the cover)
CABLE
VCR
TV
POWER
RECALL
TV/VIDEO
MTS
MUTE
VOLUME
CHRTN
CHANNEL
STOP
REW
PLAY
FF
LOCATE
SWAP
SOURCE
PIP ON OFF
REC
PAUSE/STILL
SLOW
TV/VCR
STILL/RLS
▼PIP CH ▲
PIC
AUDIO
SETUP
OPTION
RESET
EXIT
−
+
TIMER
DSP/SUR
TOSHIBA

1. Refer to the "VCR CODE TABLE" (or "CABLE TV CONVERTER CODE TABLE") on the next page to find the code number that corresponds to the brand name of your VCR (or your converter).
   If more than one number is listed, try each one separately until you find the one that works.
2. Press VCR (of CABLE).
3. Press RESET.
4. Press (within three seconds of pressing the RESET button) CHANNEL NUMBER for the two digit code number for your brand of VCR (or converter) to enter the code number.
5. Point the Remote Control at the VCR (or at the converter) and press POWER to test the code number.
   - If the right number was entered, the VCR should turn on.
   - If the VCR does not react to the Remote Control, repeat steps 1 through 5 with another code number.

For future reference, write the code you set.

VCR CODE: __________

CABLE CODE: __________

Note: You have to reprogram the Remote Control when you change its batteries.

VCR CODE TABLE

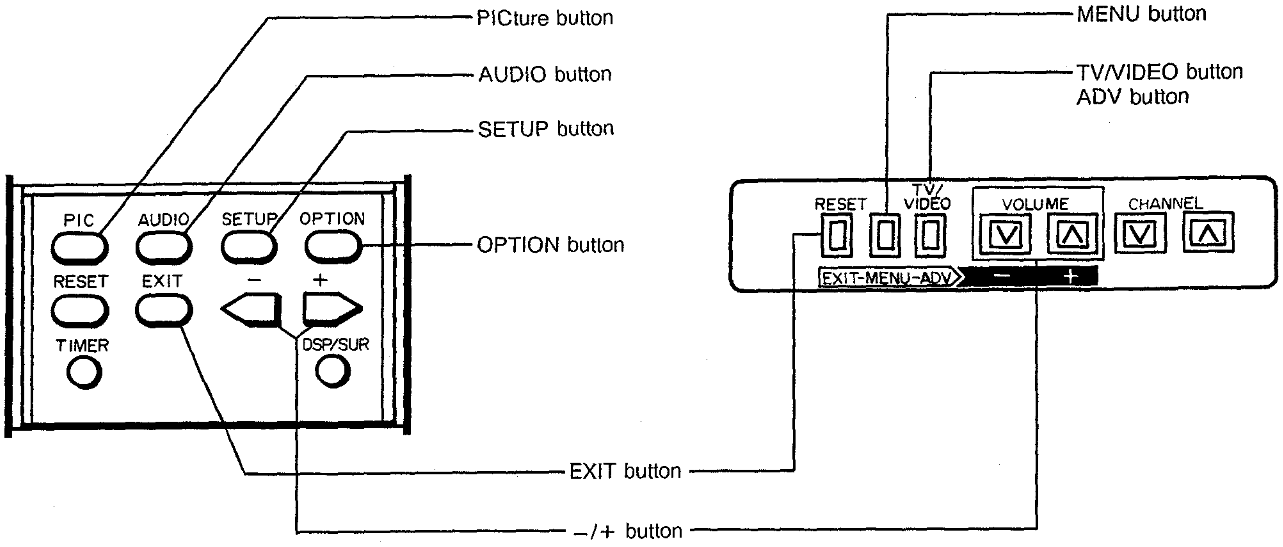
BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER
AIWA	15	NEC	02, 14, 16, 30
AKAI	03, 22, 23	PANASONIC	08
AUDIO DYNAMICS	14, 16	PENTAX	05
BROCKSONIC	10	PHILCO	08, 29
CANON	08	PHILIPS	08, 29
CAPEHART	01	PIONEER	05
CITIZEN	09	QUASAR	08
CRAIG	12	RCA	00, 05, 07, 28, 35, 37
CURTIS MATHES	00, 08, 15	REALISTIC	02, 06, 08, 12, 15
DBX	14, 16	SAMSUNG	07, 32
EMERSON	10, 20, 34	SANYO	02, 12
FISHER	12, 18, 19	SCOTT	04, 13
FUNAI	15	SEARS	02, 05, 18, 19
GE	00, 07, 08, 32	SHARP	06, 24
GOLDSTAR	09	SHINTOM	31
HITACHI	05, 35, 36	SONY	17, 26, 38
INSTANT REPLAY	08	SYLVANIA	08, 15, 29
JC PENNEY	02, 05, 08, 14, 16, 30	SYMPHONIC	15
JVC	02, 14, 16, 30	TASHIKO	09
KENWOOD	02, 14, 16, 30	TATUNG	30
MAGNAVOX	08, 29	TEAC	15, 30
MARANTZ	02, 14, 16, 29, 30	TECHNICS	08
MARTA	09	TEKNIKA	21
MEMOREX	08, 12	TOSHIBA	13
MGA	04, 27	VECTOR RESEARCH	14, 16
MINOLTA	05	VIDEO CONCEPTS	14, 16
MITSUBISHI	04, 27	WARDS	06, 25
MONTGOMERY WARD	06	YAMAHA	02, 14, 16, 30
MULTITECH	07, 15, 32	ZENITH	11, 17

CABLE TV CONVERTER CODE TABLE

BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER
ANVISION	07, 08	PHILIPS	07, 08, 19, 26, 28, 29
CABLESTAR	07, 08		32, 33, 40, 41
EAGLE	08	PIONEER	18, 20
EASTERN INT	02	RANDTEK	07, 08
GENERAL INSTRUMENT	04, 05, 15, 23, 24, 25	RCA	27
	30, 36	REGENCY	02
HAMLIN	12, 13, 34	SCIENTIFIC ATLANTA	03, 22
JERROLD	04, 05, 15, 23, 24, 25	SYLVANIA	11
	30, 36	TEKNIKA	06
MACOM	37, 43	TEXSCAN	10, 11
MAGNAVOX	07, 08, 19, 26, 28, 29	TOCOM	17, 21
	32, 33, 40, 41	UNIKA	31
NSC	09	VIEWSTAR	07, 08, 28, 32, 41
OAK	01, 16, 38	ZENITH	14, 42

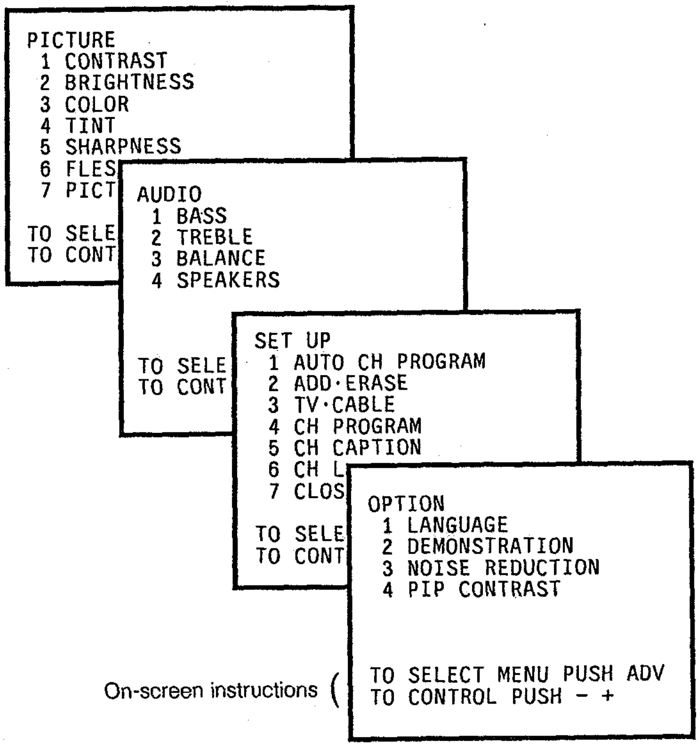
MENU FUNCTION (General Instructions)

We suggest you familiarize yourself with the procedure before using the Menu function.
To adjust any TV feature, the use of the Menu function is required. The adjustments that can be made to the TV appears on the screen.


PICture button
AUDIO button
SETUP button
OPTION button
EXIT button
–/+ button
MENU button
TV/VIDEO button
ADV button
PIC
AUDIO
SETUP
OPTION
RESET
EXIT
–
+
TIMER
DSP/SUR
RESET
TV/VIDEO
VOLUME
CHANNEL
EXIT-MENU-ADV
–
+

MENU BUTTON (on TV)

Each time you press the button, the PICTURE, AUDIO SET UP or OPTION menu on-screen display is selected in order, then press the ADV button.



```
PICTURE
 1 CONTRAST
 2 BRIGHTNESS
 3 COLOR
 4 TINT
 5 SHARPNESS
 6 FLES
 7 PICT

TO SELE
TO CONT
```

```
AUDIO
 1 BASS
 2 TREBLE
 3 BALANCE
 4 SPEAKERS

TO SELE
TO CONT
```

```
SET UP
 1 AUTO CH PROGRAM
 2 ADD·ERASE
 3 TV·CABLE
 4 CH PROGRAM
 5 CH CAPTION
 6 CH L
 7 CLOS

TO SELE
TO CONT
```

```
OPTION
 1 LANGUAGE
 2 DEMONSTRATION
 3 NOISE REDUCTION
 4 PIP CONTRAST


TO SELECT MENU PUSH ADV
TO CONTROL PUSH - +
```

On-screen instructions (

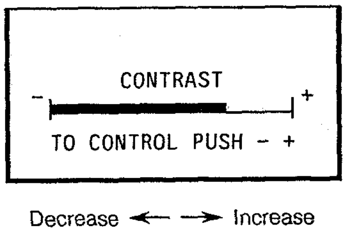
ADV BUTTON (on TV)

Use this button after you have pressed the MENU button to select the function you want to adjust.
Each time you press the button, the function to be adjusted will be selected in the numerical order.
The selected function will be displayed in cyan.

– / + BUTTONS (on TV and on Remote)

Use these buttons after you have pressed the ADV button or any of the four menu buttons (PICTURE, AUDIO, SETUP or OPTION).

<Example: CONTRAST adjustment mode display>



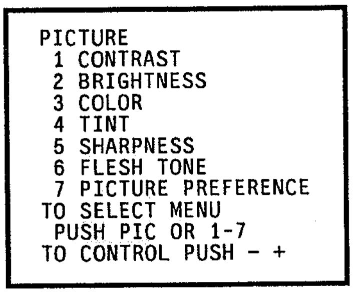
```
        CONTRAST
 -▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬____|+
 TO CONTROL PUSH - +
```

Decrease ←— —→ Increase

Pressing the + button increases the picture contrast.
Pressing the – button decreases the picture contrast.

PICTURE BUTTON (on Remote)

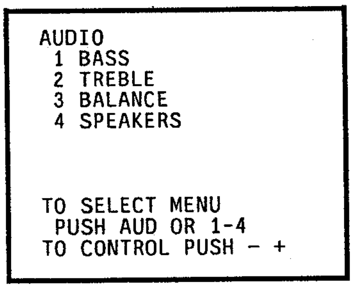
Press the button repeatedly until the PICTURE menu function you want to adjust is selected.
The numbered buttons (1-7) can also be used to direct select function.
The selected function will be displayed in cyan.
Then press the – or + button to adjust the setting.



```
PICTURE
 1 CONTRAST
 2 BRIGHTNESS
 3 COLOR
 4 TINT
 5 SHARPNESS
 6 FLESH TONE
 7 PICTURE PREFERENCE
TO SELECT MENU
 PUSH PIC OR 1-7
TO CONTROL PUSH - +
```

AUDIO BUTTON (on Remote)

Press the button repeatedly until the AUDIO menu function you want to adjust is selected.
The numbered buttons (1-4) can also be used to direct select function.
The selected function will be displayed in cyan.
Then press the – or + button to adjust the setting.

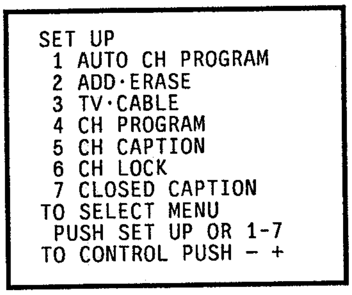


```
AUDIO
 1 BASS
 2 TREBLE
 3 BALANCE
 4 SPEAKERS


TO SELECT MENU
 PUSH AUD OR 1-4
TO CONTROL PUSH - +
```

SETUP BUTTON (on Remote)

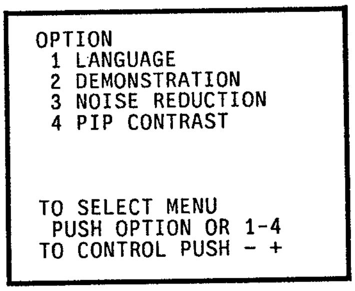
Press the button repeatedly until the SET UP menu function you want to adjust is selected.
The numbered buttons (1-7) can also be used to direct select function.
The selected function will be displayed in cyan.
Then press the – or + button to adjust the setting.



```
SET UP
 1 AUTO CH PROGRAM
 2 ADD·ERASE
 3 TV·CABLE
 4 CH PROGRAM
 5 CH CAPTION
 6 CH LOCK
 7 CLOSED CAPTION
TO SELECT MENU
 PUSH SET UP OR 1-7
TO CONTROL PUSH - +
```

OPTION BUTTON (on Remote)

Press the button repeatedly until the OPTION menu function you want to adjust is selected.
The numbered buttons (1-4) can also be used to direct select function.
The selected function will be displayed in cyan.
Then press the – or + button to adjust the setting.



```
OPTION
 1 LANGUAGE
 2 DEMONSTRATION
 3 NOISE REDUCTION
 4 PIP CONTRAST


TO SELECT MENU
 PUSH OPTION OR 1-4
TO CONTROL PUSH - +
```

EXIT BUTTON (on TV and on Remote)

The above four menu displays will automatically disappear from the screen if no control has been operated for about 15 seconds, and all other menu displays also disappear after about 6 seconds.
If you want to clear the screen of all on-screen displays instantly, press this button.

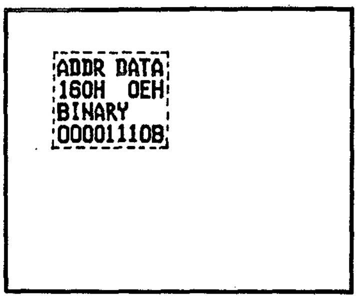
Notes:
- The ADV button on the TV set functions as the TV/VIDEO button when no menu display is on the screen.
- The –/+ buttons on the TV set function as the VOLUME ▲/▼ buttons when no menu display is on the screen.
- The EXIT button on the TV set functions as the RESET button when there is no on-screen display.

SERVICE MODE AND ADJUSTMENTS

After replacing ICA02 (E2PROM), adjustment in SERVICE MODE is required.

1. ENTERING TO SERVICE MODE

1. Press MUTE button once on remote control unit.
2. Press again MUTE button to keep pressing.
3. Keep pressing the MUTE button, press MENU button on TV set.
   The SERVICE MODE picture will come out on screen.



```
ADDR DATA
160H  0EH
BINARY
00001110B
```

2. INITIALIZATION

1. Press RECALL key on remote control unit.
2. This makes termination of initialization of all area in memory.
3. On almost of models, all service adjustments described below will finish by this initialization.

3. SWITCHING OF ADJUSTING MODE

The main address will change as shown below by every pressing of MENU button on TV set.
160H→107H→100H→174H→1D0H→[Exit from SERVICE MODE]

ADDR	Name of ADJUSTING MODE	Last memory after adjustment
160H	Adjustment of video correction value	Memorize
107H	Sub adjustment	Memorize
100H	Adjustment of IC501 (VIDEO processing)	Memorize except for a part.
174H	Setting of the optional functions	Memorize
1D0H	Change of in non volatile memory data	Memorize

4. SWITCHING METHOD OF ADJUSTMENT ITEMS IN THE ADJUSTING MODE

Every pressing of VOLUME ▲ button will change the address as below, and the pressing of VOLUME ▼ button will change the address to the reverse direction.

1. 160H →162H→164H→165H→160H (returned to start position)
2. 107H →108H→105H→163H→161H→111H→107H (to start position)
3. 100H →101H→102H→103H→104H→105H→106H→107H→108H→109H→10AH→10BH→10CH→10DH →10EH→10FH→110H→111H→112H→100H (to start position)
4. 174H →175H→176H→174H (to start position)
5. 1D0H→1D1H→1D2H→1D3H→1D4H→1D5H→1DAH→1DBH→1DCH→1DDH→1DEH→1DFH→1E0H →1E1H→1E2H→1D0H (to start position)

See the next page for reference table of ADDR and adjusting items.

5. ADJUSTMENT METHOD OF DATA

1. Pressing of +·– button will change the value of DATA in the range from 00H to FFH. The variable range depends on the adjusting item.
2. Items that may require adjustment after initialization, are the adjustment (ADDR:160H) of video correction value and the sub adjustment (ADDR:107H). When the variable range is not appropriate, perform adjustment watching the screen.

6. EXIT FROM SERVICE MODE

Key operation:

1. EXIT
2. POWER
3. MENU key
4. Other keys associated with display

7. OTHER SERVICE FUNCTIONS

The following key entry during display of service mode screen, provides special functions.

1. MUTE : Presetting of all channels (delivery setting)
2. RESET/EXIT : Execution of self diagnosis

Note : Finally, do AUTO CHANNEL PROGRAM.

8. REFERENCE TABLE OF ADDRESS AND ADJUSTING ITEMS

1. ADJUSTMENT OF VIDEO CORRECTION VALUE

Address	Items	Memory
160H	CONTRAST	○
162H	COLOR in THEATER	○
164H	SHARPNESS	○
165H	PIP-CONTRAST	○

2. SUB ADJUSTMENT

Address	Items	Memory
107H	SUB-COLOR	○
108H	SUB-CONTRAST	○
105H	PIP-BRIGHT	○
163H	SUB-TINT	○
161H	SUB-BRIGHT	○
111H	MONITOR SWITCH	○

3. OPERATION OF IC501 (VCD)

Address	Items	Memory
100H	CONTRAST	
101H	BRIGHTNESS	
102H	COLOR	
103H	TINT	
104H	SHARPNESS	
105H	PIP-BRIGHT	○
106H	PIP-CONTRAST	○
107H	SUB-COLOR	○
108H	SUB-CONTRAST	○
109H	R CUTOFF	○
10AH	G CUTOFF	○
10BH	B CUTOFF	○
10CH	G DRIVE	○
10DH	B DRIVE	○
10EH	CHROMA CONTROL	
10FH	VIDEO CONTROL1	
110H	VIDEO CONTROL2	
111H	HOR POSITION	○
112H	VER POSITION	○

4. ADJUSTMENT OF OPTIONAL SW

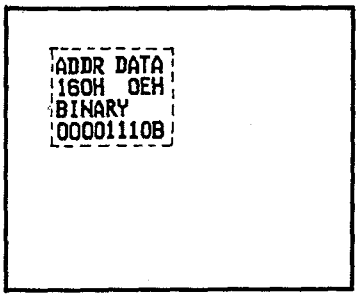
Address	Items	Memory
174H	Option setting	○
175H	Memory version 1	○
176H	Number of protect	○

5. DATA REVISION OF ICA02 (E2PROM)

Address	Items	Memory
1D0H	STD CHROMA CONTROL	○
1D1H	STD VIDEO CONTROL 1	○
1D2H	STD VIDEO CONTROL 2	○
1D3H	THEATER CHROMA CONTROL	○
1D4H	THEATER VIDEO CONTROL 1	○
1D5H	THEATER VIDEO CONTROL 2	○
1DAH	Option setting 2	○
1DBH	Option setting 3	○
1DDH	Memory version 2	○
1DEH	THEATER R CUTOFF CORRECT	○
1DFH	THEATER G CUTOFF CORRECT	○
1E0H	THEATER B CUTOFF CORRECT	○
1E1H	THEATER G DRIVE CORRECT	○
1E2H	THEATER B DRIVE CORRECT	○

9. SELF DIAGNOSTIC FUNCTION

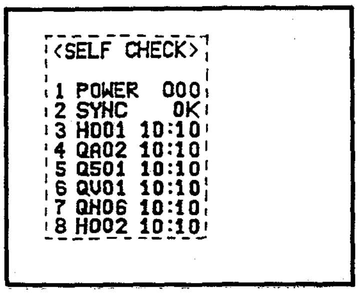
1. Press RESET button on the TV during display of SERVICE MODE picture, the diagnosis will begin to check if interface among IC's are executed properly.
2. During diagnosis, the following displays are shown.
   (1) Operation number of protecting circuit
   (OVER CURRENT, OVER VOLTAGE, F/S) . . . . . The first position; "000" is normal.
   (2) The status of SYNC signal at pin 29 of ICA01 . . . . The second position; "OK" is normal.
   (3) Communication status to IC's
   (H001, H002, ICA02, IC501, ICV01 and ICN06)



```
ADDR DATA
160H  0EH
BINARY
00001110B
```

Example of display
of service mode

Press RESET button on TV set.



```
<SELF CHECK>

1 POWER  000
2 SYNC    OK
3 H001 10:10
4 QA02 10:10
5 Q501 10:10
6 QV01 10:10
7 QH06 10:10
8 H002 10:10
```

(4) Nos 3 to 8 on the screen display which are connected to #31 and #32 (SCL, SDA) line, show number of controls carried out correctly and the number of confirmation.
(Number of confirmation) : (Number of correct control)

→ 10 is normal.
Less than 10 means defective IC.

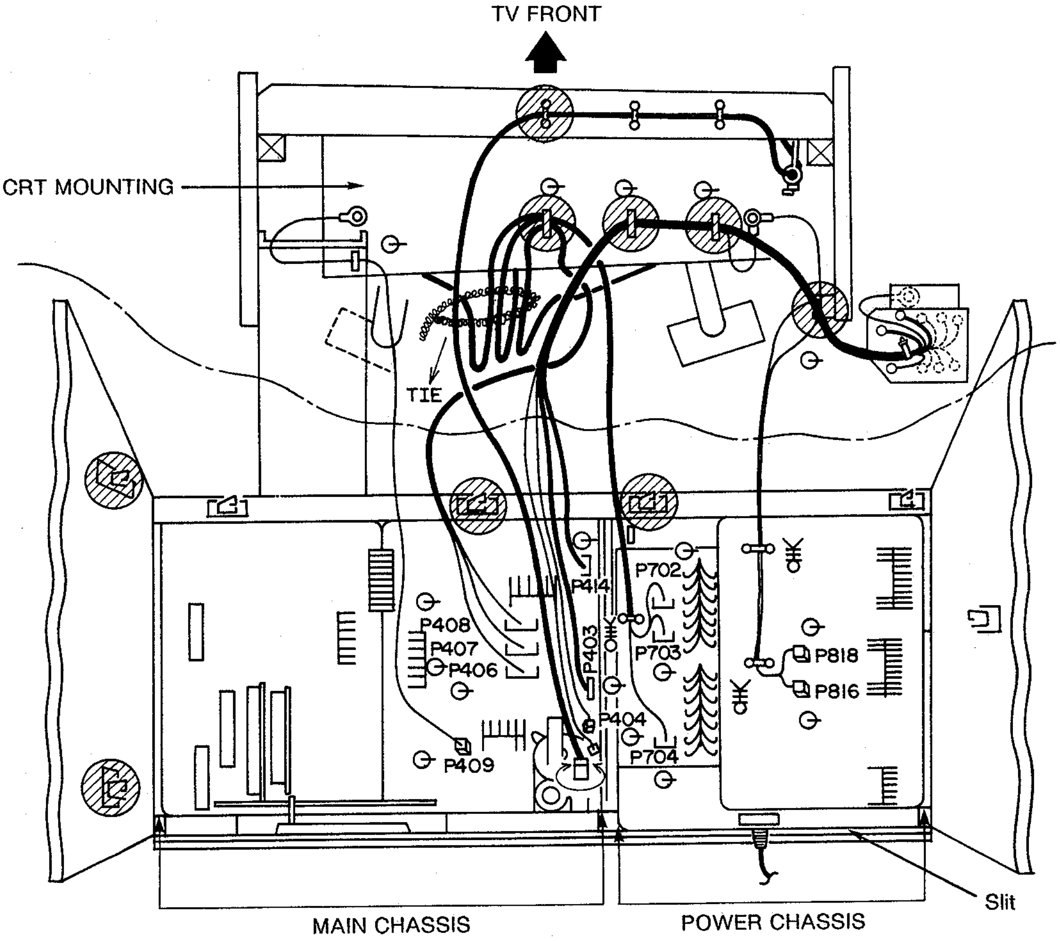
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

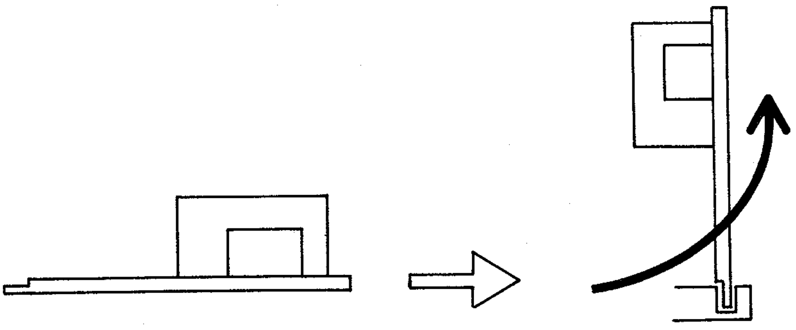
SETTING UP THE CHASSIS

In order to assure the performance, processed wires shall be replaced after the repair work.
Work procedures are as follows.

1. Remove the back board. (See page 35.)
2. Remove nine holders and one TIE in ▨ of the following sketch .
3. Draw out the main power unit and both chassis together.
4. Insert the front edge of the chassis into the groove where the back board has been inserted and make the chassis stand.

After repair work finished, replace it in the opposite procedure.


TV FRONT
CRT MOUNTING
TIE
P408
P407
P406
P409
P414
P403
P404
P702
P703
P704
P818
P816
Slit
MAIN CHASSIS
POWER CHASSIS

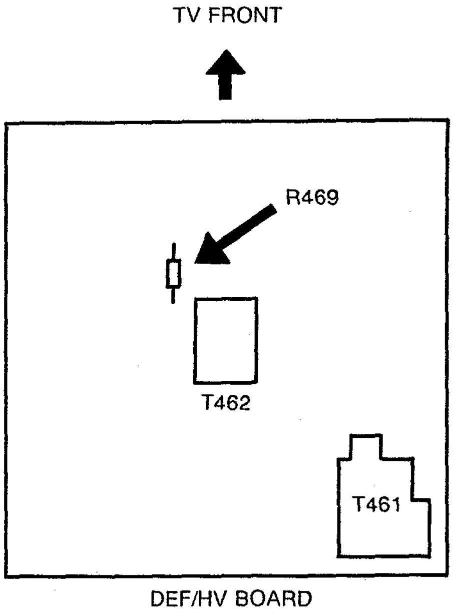


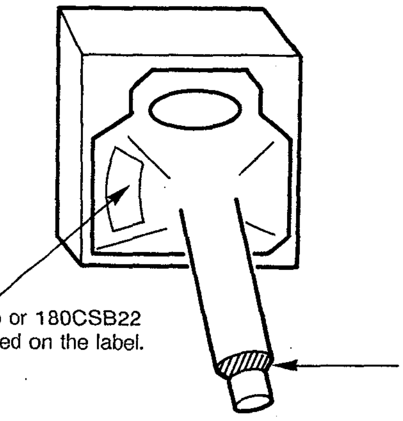
REPLACEMENT OF THE CRT
(Pay attention to the combination of the CRT and R469)

There are two types of CRT's at the shipment from the works; one contains each one of 180DUB22(R.G.B); and the other contains each one of 180CSB22(R.G.B)K. However, only 180DUB22(R.G.B) is supplied as a service part, therefore, there will be four types of combinations after replacing a CRT. Since the value of R469 (heater resistor) to be connected with each combination varies, when to replace a CRT, also replace the resistor R469 in the service kit according to the following table.

Note: If 180DUB22 (R.G.B) are used for all the three from the beginning, R469 is not required to be replaced.

180DUB22(R.G.B)	180CSB22(R.G.B)K	R469
0	3	2.4 ohm
1	2	2.0 ohm
2	1	2.0 ohm
3	0	1.8 ohm





180DUB22 (R.G.B) or 180CSB22 (R.G.B) K is indicated on the label.

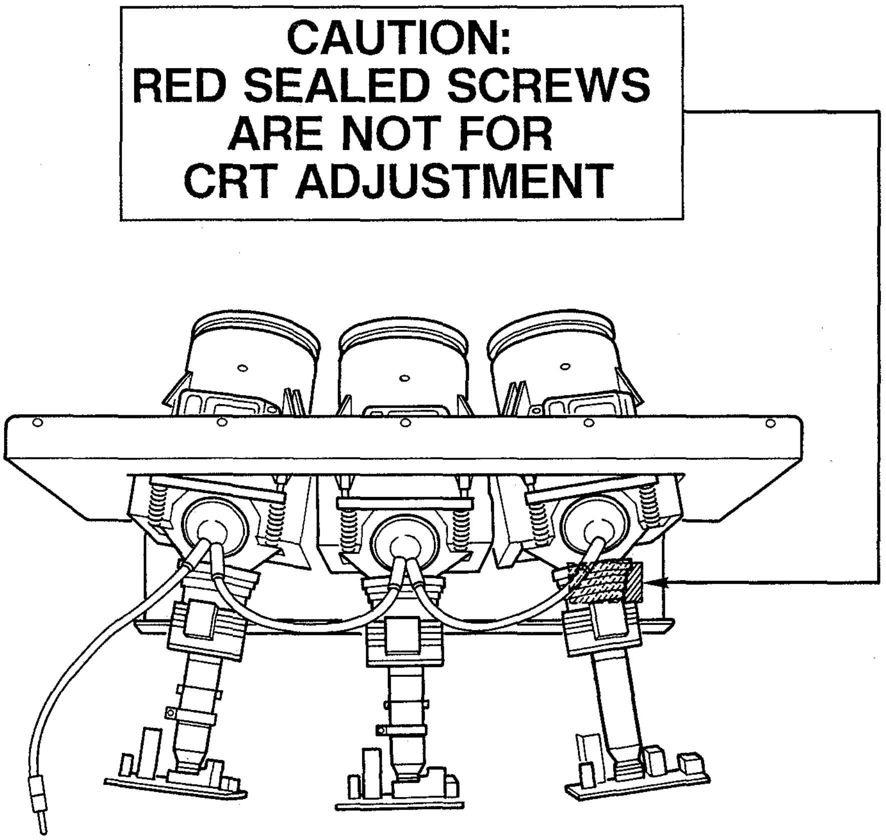
Mold color Black : 180DUB22(R.G.B)
Green : 180CSB22(R.G.B)K

Service kits are provided for each R, G and B. The contents of the kits are as follows:

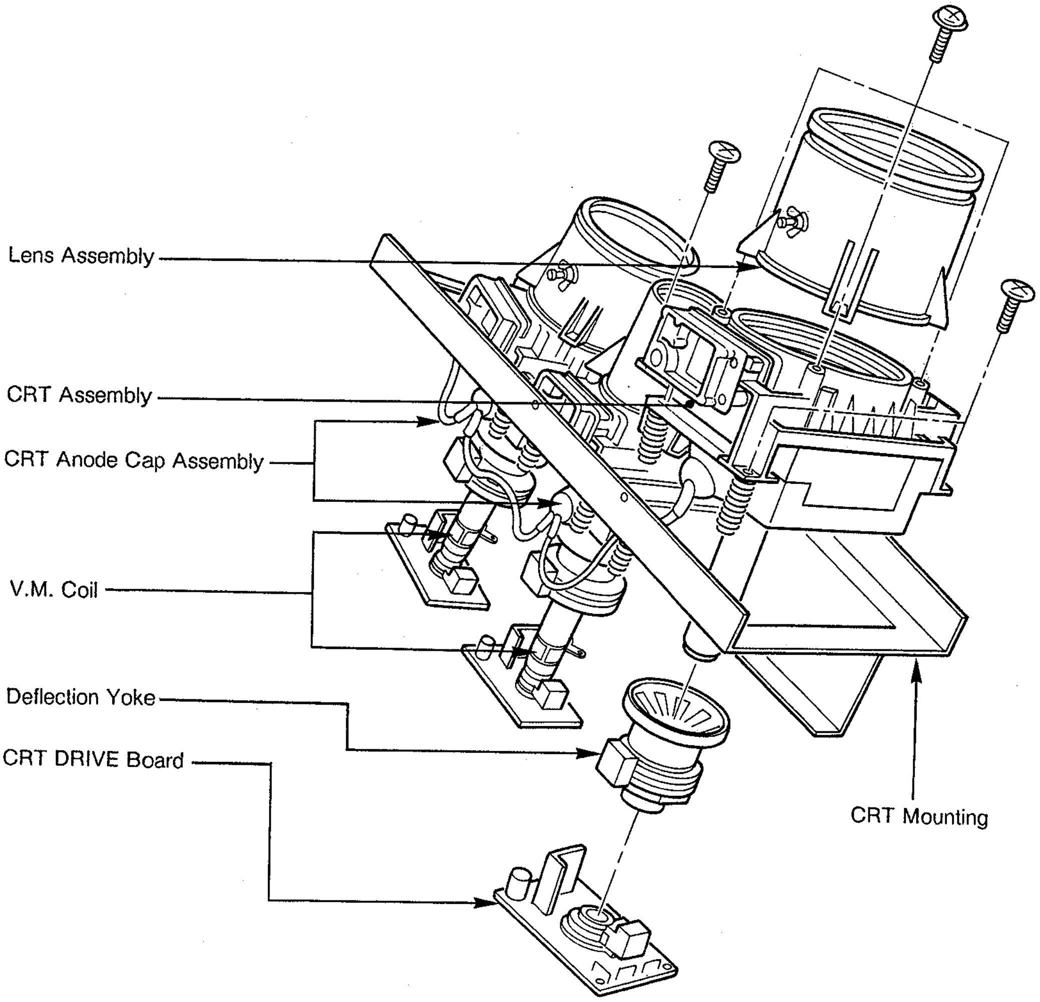
R : KIT SERVICE (R) 23305477	Projection Tube assembly (R)	23791382
	Instructions	23561976
	Resistor, Fusible, 1.8 ohm ± 5%, 2W	24000945
	Resistor, Fusible, 2 ohm ± 5%, 2W	24000940
G : KIT SERVICE (G) 23305478	Projection Tube assembly (G)	23791383
	Instructions	23561976
	Resistor, Fusible, 1.8 ohm ± 5%, 2W	24000945
	Resistor, Fusible, 2 ohm ± 5%, 2W	29000940
B : KIT SERVICE (B) 23305479	Projection Tube assembly (B)	23791384
	Instructions	23561976
	Resistor, Fusible, 1.8 ohm ± 5%, 2W	24000945
	Resistor, Fusible, 2 ohm ± 5%, 2W	24000940

CRT ASSEMBLY REPLACEMENT AND MOUNTING

CAUTION : DO NOT LOOSEN THE RED SEALED SCREWS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.



CAUTION:
RED SEALED SCREWS
ARE NOT FOR
CRT ADJUSTMENT


Lens Assembly
CRT Assembly
CRT Anode Cap Assembly
V.M. Coil
Deflection Yoke
CRT DRIVE Board
CRT Mounting

Lens and Neck Components View

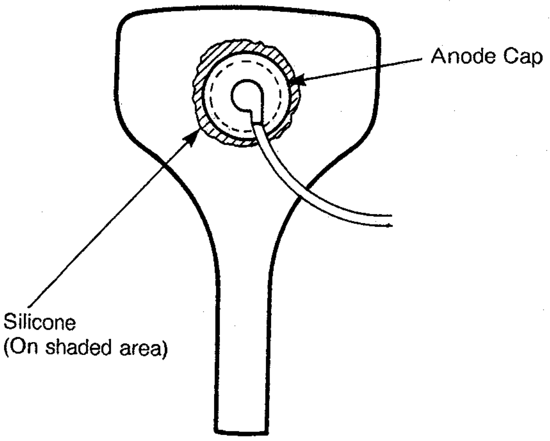
TO REMOVE CRT (Same procedure for R, G, B)

1. Remove CRT DRIVE Board, V. M. COIL (R, G ONLY) from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Monitoring.

TO MOUNT CRT (Same procedure for R, G, B)

1. Proceed with the reverse way in the CRT removal.

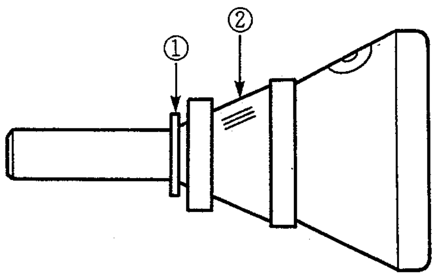
- ■ Anode Cap Assembly Replacement
  Remove Anode Cap Assembly to replace with new one (T461A).
  Put enough silicon (T461B) on around the anode caps.


Anode Cap
Silicone
(On shaded area)

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

PICTURE TUBE COMPONENTS ADJUSTMENT

DESCRIPTION OF NECK COMPONENTS



① Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment on production line.

② Deflection yoke
Disconnect PJ05. This contains convergence yoke, too.
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.

PREPARATION
1. Ensure all of static VRs are preset at mechanical center. (RK101, 102, 103, 104)
2. Operate the receiver for at least 5 minutes.

R, G, B FOCUS ADJUSTMENT

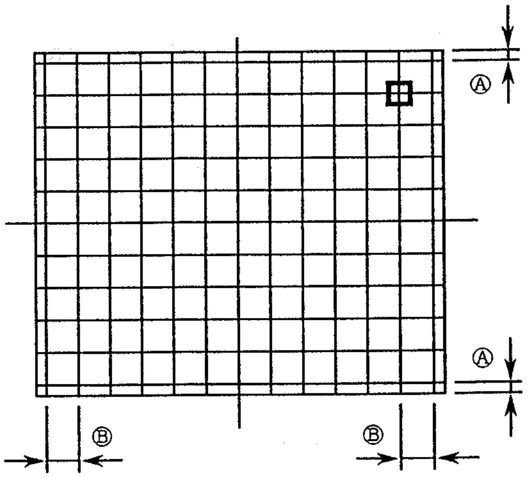
1. Disconnect PJ05.
2. Set "TEST/NORM" switch to TEST position.
3. Adjust R, G, B lenses focus to best focusing point of picture center.
   After find out fasten screw. (Put lens cover on not adjusting lenses.)
4. Adjust FOCUS VR R, G, B of FOCUS PAC to find best focusing point of picture center.

TILT ADJUSTMENT

Rotate R, G, B deflection yoke so that picture becomes horizon as figure, then fasten screw.

CENTERING ADJUSTMENT

1. Connect PJ05.
2. Adjust G centering magnet so that the CROSS pattern center comes to screen center. Press SJ01 ON to receive CROSS-HATCH pattern. Turn SJ02 to G-ADJ side.
3. Adjust V LIN (R397) for best linearity. (Fig-1 Ⓐ)
4. Adjust V HEIGHT (R396) as figure. (Fig-1 Ⓐ)



< reference data >
Ⓐ: 48" ...... 35 mm
55" ...... 40 mm
Ⓑ: 48" ...... 43 mm
55" ...... 49 mm

(Fig-1)

5. Adjust H WIDTH (L442) and GH-O. LIN VR (RK82) on PB3366-1 so that Fig-1 Ⓑ will be equal distance.
6. Check whole quality of green picture.
7. Set SJ01 switch to OFF position and "TEST/NORM" switch to TEST position.
8. Adjust R, B centering magnet so that the CROSS pattern center comes to screen center.

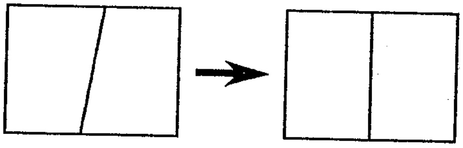
CAUTION:
1. The VR101, 102, 103, 104 must be set to mechanical center for R and B centering.
2. Set "TEST/NORM" switch to NORM position.

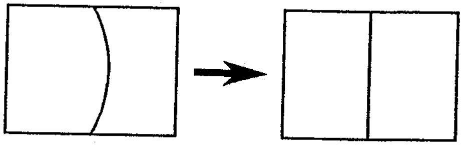
PREPARATION FOR CONVERGENCE ADJUSTMENTS

1. Press SJ01 ON to receive CROSS-HATCH pattern.
2. Turn SJ02 to G-ADJ side.
3. Ensure picture has no distortion.
4. Ensure all of convergence VRs are preset at mechanical center.

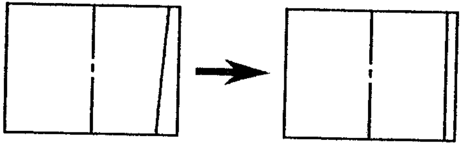
GREEN HORIZ. CONV. ADJUSTMENT

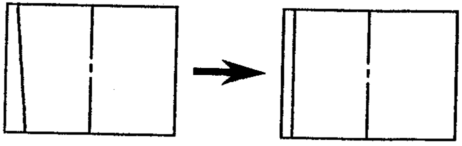
1. Converge center vertical line adjusting RK03 (TILT)/RK06 (BOW).


(TILT RK03)

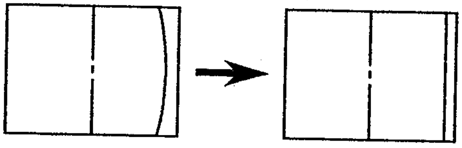

(BOW RK06)

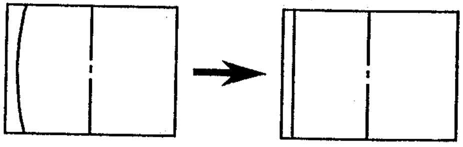
2. Move line on right side adjusting with RK09 (KEY).
   Move line on left side adjusting with RK24 (SKEY).


(KEY RK09)

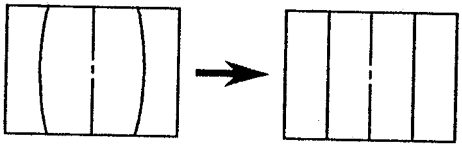

(SKEY RK24)

3. Move line on right side adjusting with RK14 (O. PIN).
   Move line on left side adjusting with RK17 (O. SPIN).


(O. PIN RK14)


(O. SPIN RK17)

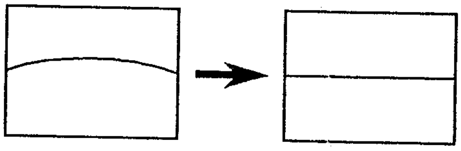
4. Move line on middle side adjusting RK27 (I. PIN).


(I. PIN RK27)

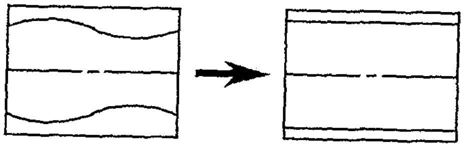
5. Move right and left and middle line if cannot readjust RK14 or RK17, RK27.

GREEN VERT. CONVERGENCE ADJUSTMENT

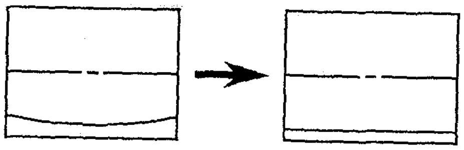
1. Converge center horizontal line adjusting RK41 (BOW).

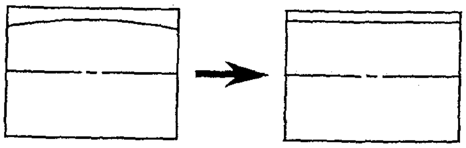

(BOW RK41)

2. Move line on upper and lower side by wave adjusting RK86 (WAVE).

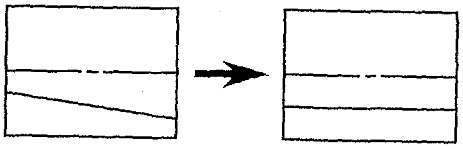

(WAVE RK86)

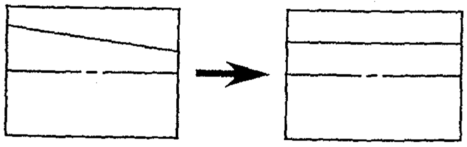
3. Move line on lower side adjusting RK49 (PIN).
   Move line on upper side adjusting RK81 (SPIN).


(PIN RK49)


(SPIN RK81)

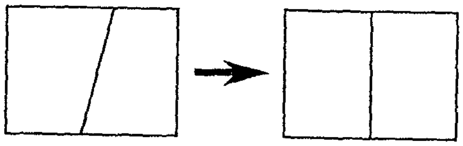
4. Move upper and lower line if cannot readjust RK86 or RK49, RK81.
5. Move line on middle lower side adjusting RK44 (I. KEY).
   Move line on middle upper side adjusting RK80 (I. SKEY).

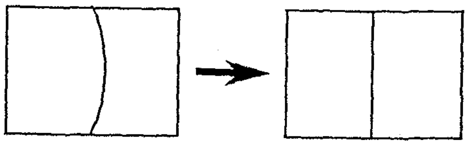

(I. KEY RK44)


(I. SKEY RK80)

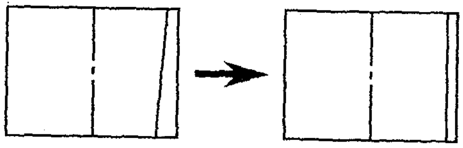
BLUE HORIZ. CONV. ADJUSTMENT

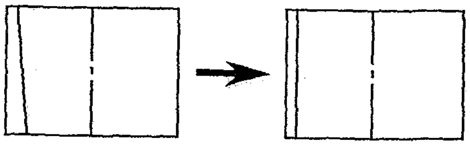
1. Turn SJ02 to B-ADJ side.
2. Converge center vertical line onto G by adjusting RK02 (TILT)/RK05 (BOW).


(TILT RK02)

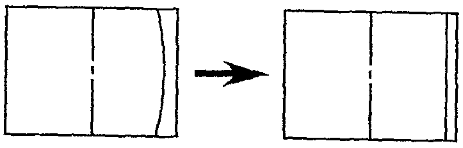

(BOW RK05)

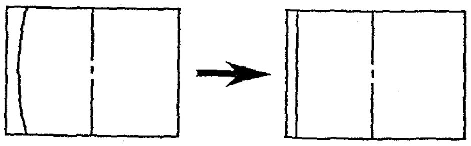
3. Move B line on right side to make it mostly parallel to G line with RK08 (KEY).
   Move B line on left side to make it mostly parallel to G line with RK11 (SKEY).


(KEY RK08)


(SKEY RK11)

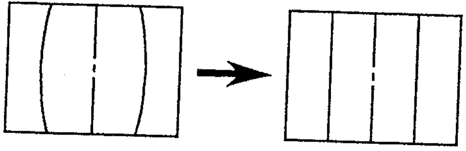
4. Move B line on right side to make it mostly parallel to G line with RK13 (O. PIN).
   Move B line on left side to make it mostly parallel to G line with RK16 (O. SPIN).


(O. PIN RK13)


(O. SPIN RK16)

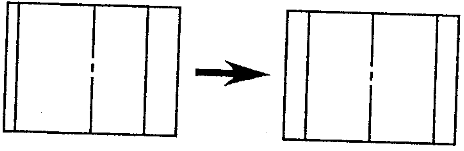
5. Move B line on middle side to make it mostly parallel to G line with RK26 (I. PIN).

(I. PIN RK26)



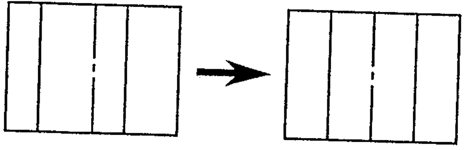
6. Move right and left and middle line if cannot readjust RK13 or RK16, RK26.
7. Move B on both right and left sides together with RK18 (O. LIN) so that opposite directions and same distances can be obtained as below.

(O. LIN RK18)



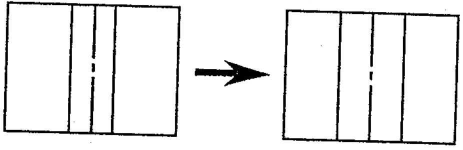
8. Move B on both right and left middle sides together with RK35 (I. LIN) so that opposite directions and same distances can be obtained as below.

(I. LIN RK35)

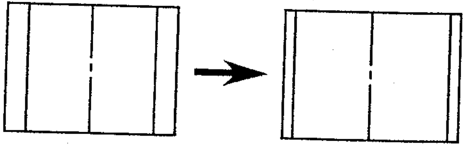


9. Move right and left and middle line if cannot readjust RK18 or RK35.
10. Converge B line on right and left middle sides at the same time with RK23 (I. SIZE).
    Converge B line on right and left middle sides at the same time with RK21 (O. SIZE).

(I. SIZE RK23)



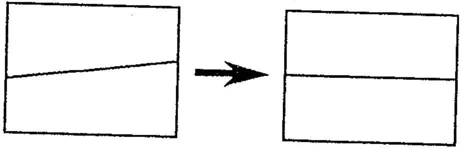
(O. SIZE RK21)



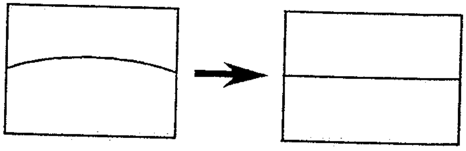
BLUE VERT. CONVERGENCE ADJUSTMENT

1. Converge center horizontal line on to G by adjusting RK38 (TILT)/RK40 (BOW).

(TILT RK38)

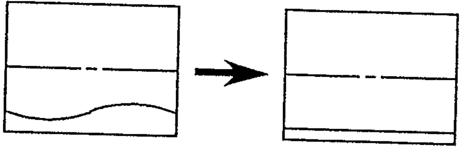


(BOW RK40)

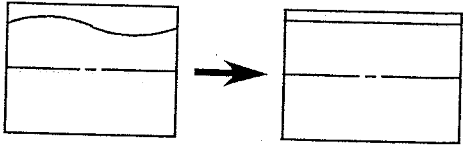


2. Move B line on lower side to make mostly parallel to G line with RK76 (WAVE).
   Move B line on upper side to make mostly parallel to G line with RK46 (SWAVE).

(WAVE RK76)

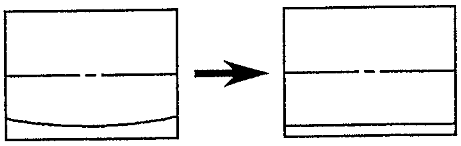


(SWAVE RK46)

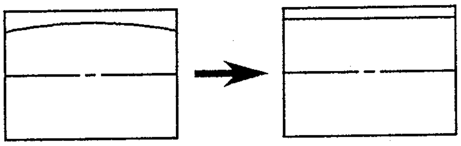


3. Move B line on lower side to make mostly parallel to G line with RK48 (PIN).
   Move B line on upper side to make mostly parallel to G line with RK51 (SPIN).

(PIN RK48)

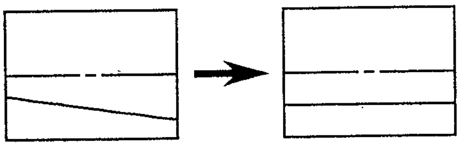


(SPIN RK51)

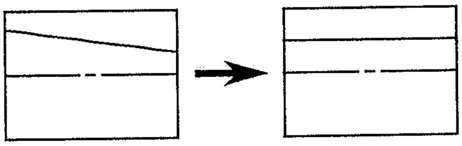


4. Move B line on lower middle side to make mostly parallel to G line with RK43 (I. KEY).
   Move B line on upper middle side to make mostly parallel to G line with RK79 (I. SKEY).

(I. KEY RK43)

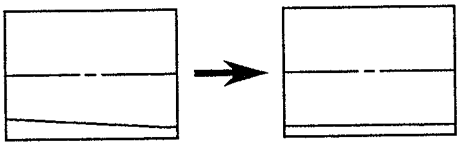


(I. SKEY RK79)

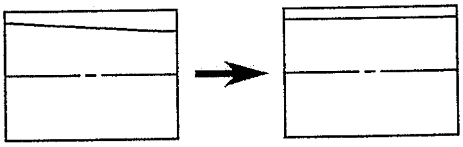


5. Move B line on lower side to make mostly parallel to G line with RK61 (O. KEY).
   Move B line on upper side to make mostly parallel to G line with RK56 (O. SKEY).

(O. KEY RK61)

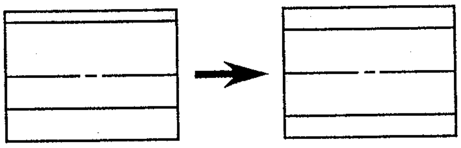


(O. SKEY RK56)



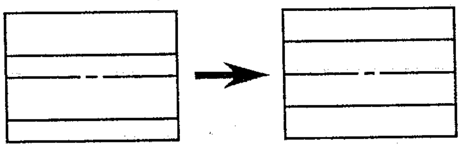
6. Move upper and lower line if cannot readjust RK43 or RK79, RK61, RK56.
7. Move B line on upper and lower side to make mostly parallel to G line with RK53 (O.LIN).

(O. LIN RK56)



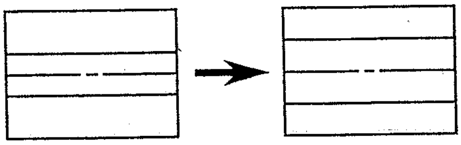
8. Move B line on upper and lower middle side to make mostly parallel to G line with RK64 (I. LIN).

(I. LIN RK64)



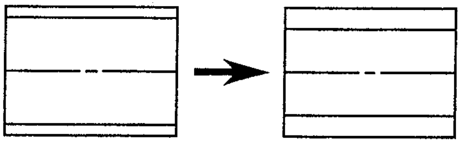
9. Move upper and lower line if cannot readjust RK53 or RK64.
10. Move B line on upper and lower middle side to make mostly parallel to G line with RK59 (I. SIZE).

(I. SIZE RK59)



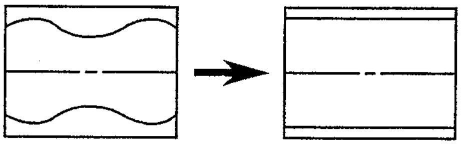
11. Move B line on upper and lower side to make mostly parallel to G line with RK84 (O. SIZE).

(O. SIZE RK84)



12. Move upper and lower or middle line if cannot readjust RK59 or RK84.
13. Move B line on upper and lower side to make mostly parallel to G line with RK73 (WING).

(WING RK73)



RED HORIZ. CONVERGENCE

1. Turn SJ02 to R-ADJ side.
2. Adjust convergence between R and G by adjusting following VRs.
   Procedures are same as Blue.
   RK01 (TILT), RK04 (BOW), RK07 (KEY), RK10 (SKEY), RK12 (O. PIN), RK15 (O. SPIN), RK25 (I. PIN), RK19 (O. LIN), RK34 (I. LIN), RK22 (I. SIZE), RK20 (O. SIZE).

RED VERT. CONVERGENCE ADJUSTMENT

1. Adjust convergence between R and G by adjusting following VRs.
   Procedures are same as Blue.
   RK37 (TILT), RK39 (BOW), RK75 (WAVE), RK45 (SWAVE), RK47 (PIN), RK50 (SPIN), RK42 (I. KEY), RK78 (I. SKEY), RK60 (O. KEY), RK55 (O. SKEY), RK52 (O. LIN), RK63 (I. LIN), RK58 (I. SIZE), RK83 (O. SIZE), RK72 (WING).
2. Press SJ01 OFF.

CRT GRAY SCALE ADJUSTMENT

1. Press RESET button on TV or remote hand set.
2. Select Video 3 mode. (Don't put any signal in Video 3 jack.)
3. Adjust the data of address 109^{H} and $10B^{H}$ to "40^{H}".
4. Press EXIT button.
5. Gradually rotate the R, G and B screen volume of FOCUS PAC clockwise or counterclockwise until the raster appears slightly on the CRT through the each lens, and leave them.
   (Look into the lens in order to check the raster.)
6. Tune in an active channel.
7. Adjust the data of address 109^{H} and $10B^{H}$ for low light area. Address 109^{H} controls RED CRT bias and $10B^{H}$ is for BLUE.
8. Press EXIT button.
9. Adjust R-DRIVE (R950) and B-DRIVE (R952) Controls for proper white-balanced picture in high light area.
10. Check the white balance in both low and high light areas. If necessary, perform again steps from 7 to 9.

CIRCUIT ADJUSTMENT

DEF/HV BOARD ADJUSTMENT

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST to minimum (zero beam current).
3. High voltage must be measured below 32.0 kV.
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CAUTION:
When the parts tabled below are failed, do not replace the parts, but replace the whole DEF/HV Board with new one.

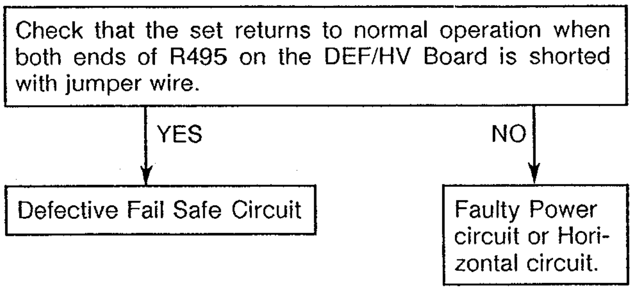
Location No.	Name	Type
T461	Flyback Trans.	TFB5070AN
D424	Zener Diode	μPC574J
T421	Transformer	TPC2026
Q414	Transistor	2SC2655-Y
Q412	IC	TA75458P
R431	Resistor	91k ohm, ±1%
R438	Resistor	24k ohm, ±1%
R440	Resistor	5.1k ohm, ±1%
R439	VR	2k ohm

FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on.
2. Temporarily short TP- Ⓡ and TP- Ⓧ on the DEF/HV Board with a jumper wire.
   Raster and sound will disappear.
3. The receiver must remain in this slate even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the receiver on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit



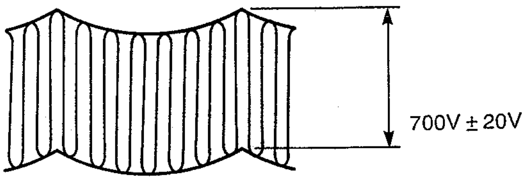
Check that the set returns to normal operation when both ends of R495 on the DEF/HV Board is shorted with jumper wire.

Defective Fail Safe Circuit

Faulty Power circuit or Horizontal circuit.

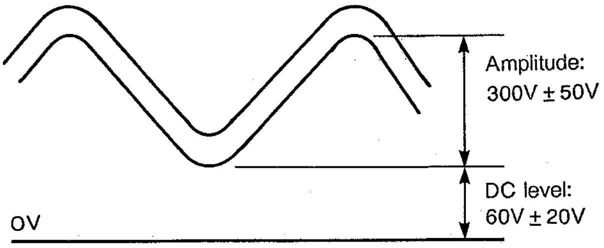
L470 (HOR. FOCUS PARABOLA) ADJUSTMENT

1. Connect oscilloscope (100:1 probe) to terminal P415 and ground.
2. Turn on the TV set and adjust L470 for the peak-to-peak value of parabola wave as shown below.



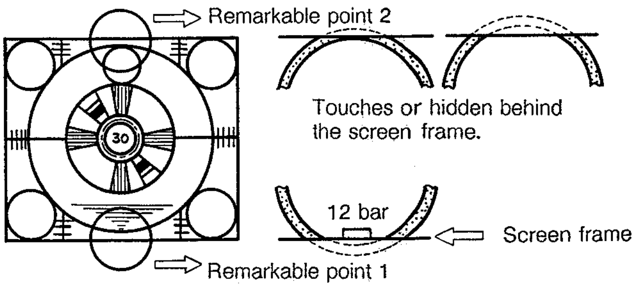
R457 (VER. FOCUS PARABOLA AMPLITUDE) AND R482 (VER FOCUS PARABOLA DC LEVEL) ADJUSTMENTS

1. Connect oscilloscope (100:1 probe) to terminal P430 and ground.
2. Adjust R475 (Amplitude) and R482 (DC level) for the value as shown below.

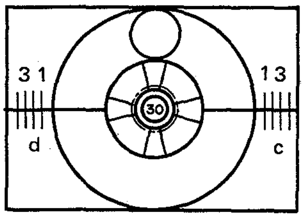


L442 (HOR WIDTH), R396 (HEIGHT) AND R397 (VER LINEARITY) ADJUSTMENTS

1. Receive RETMA (Round pattern) signal.
2. Watching the TV screen, adjust VER LINEARITY (R397) for the best linear.
3. Adjust HEIGHT (R396) as shown below.



4. Adjust HOR WIDTH (L442) so that numbers of markers (d + c) can be 11.



ANODE VOLTAGE MEASURING METHOD

CAUTION: *Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).*

1. *Disconnect the FBT anode cable as outlined below.* Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See figure a.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect. (See figure b.)
5. When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

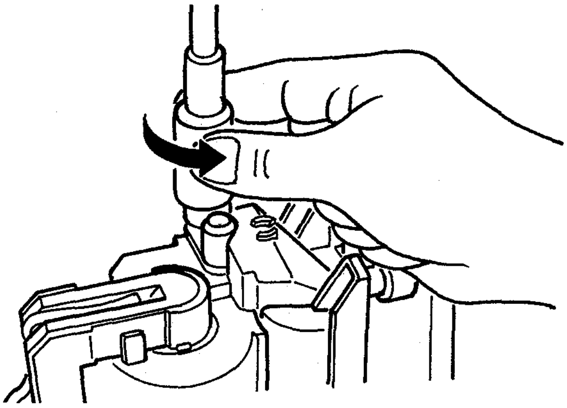


Figure a.

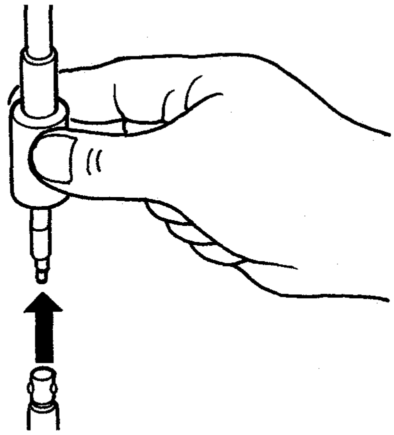


Figure b.

MAIN BOARD ADJUSTMENT

SUB-BRIGHT AND SUB-CONTRAST ADJUSTMENT

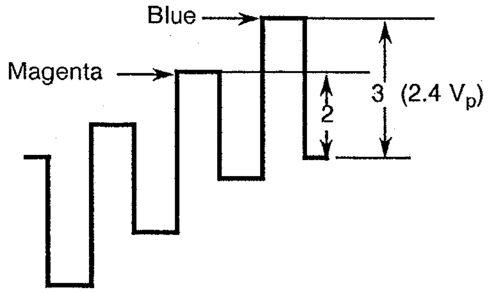
(SUB-BRIGHT: Sub ADD 161H)
(SUB-CONTRAST: Sub ADD 108H)

1. Tune in a color program and press the RESET button.
2. Leave the receiver for five minutes in this state.
3. Watching the picture carefully, adjust the SUB-BRIGHT Control to the position where the picture does not show evidence of blooming in high bright area and does not appear too dark in low bright area.
4. Check for proper picture variation by changing the CONTRAST and BRIGHT to both extremes.
5. If the picture does not appear dark with the CONTRAST and BRIGHT minimum or does not appear bright with the maximum, adjust the SUB-BRIGHT Control again for an acceptable picture.

SUB-TINT AND SUB-COLOR ADJUSTMENTS

(Sub-TINT: Sub ADD 163H)
(Sub-COLOR: Sub ADD 107H)

1. Receive color-bar signal from color-bar generator.
2. Press the RESET button.
3. Connect oscilloscope to the IC501 39 pin on MAIN board.
4. Sub ADD 100H D7 → [1] (Video Mute)
   Sub ADD 111H D6, D5 → [0, 1] (39 pin B-Y output)
   Sub ADD 110H D5, D4 → [1, 1] (Yr OFF)
   Sub ADD 102H 4D → 12
5. Adjust SUB-TINT (Sub ADD 163H) to obtain a blue bar to magenta bar ratio of 3:2 as shown below.



6. Sub ADD 102H 12 → 4D (Return color)
7. Sub ADD 107H D6, D5 → [1, 1] (Color Lim. OFF)
8. Adjust SUB-COLOR (Sub ADD 107H) to achieve $2.4V_{o\text{-}p}$ of blue bar on scope.
9. Sub ADD 100H, 111H, 110H → To original
   Sub ADD 107H D6, D5 → [0, 0]

CCD BOARD ADJUSTMENT

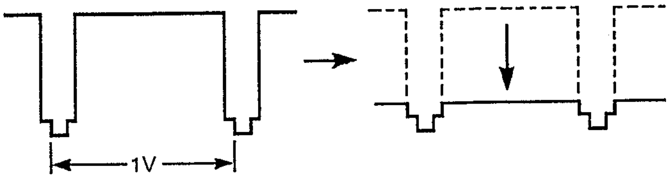
When QZ04 or QZ30 is replaced, adjust the following items in sequence.

PREPARATION :

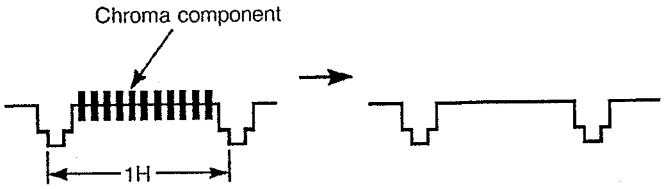
- Set the controls (RZ50, RZ51, RZ52, RZ53 and RZ54) to the center of the rotation angle.

ADJUSTMENT :

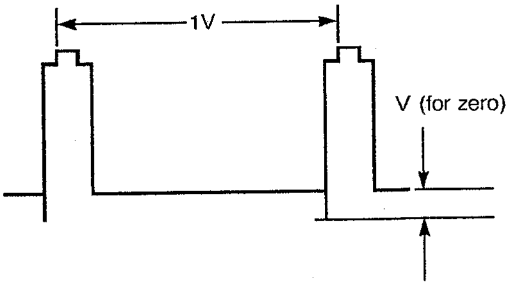
1. VERTICAL CONTOUR CORRECTION SIGNAL ADJUSTMENT (RZ52)
   1) Apply the signal which includes the white peak component to the antenna input.
   2) Connect oscilloscope to pin 1 of QZ30 and adjust the horizontal gain for vertical sync. period.
   3) Adjust RZ52 to make the video signal components zero.



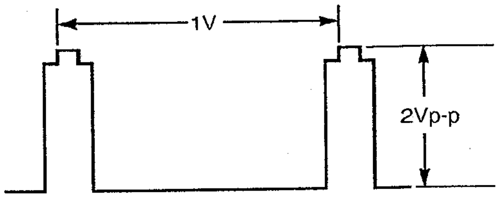
2. Y-COMB ADJUSTMENT (RZ51, RZ54)
   1) Apply a rainbow color bar pattern signal to the antenna input.
   2) Connect an oscilloscope to pin 16 of QZ30 and adjust horizontal gain for horizontal sync. period.
   3) Adjust RZ51 and RZ54 alternately for minimum chroma components in the video signals.



3. VERTICAL CONTOUR EDGE CORRECTION ADJUSTMENT (RZ53)
   1) Apply the signal which includes the white peak component to the antenna input.
   2) Connect oscilloscope to pin 16 of QZ30 and set the horizontal gain for vertical sync. period.
   3) Adjust RZ53 to make "v" component in the waveform zero.



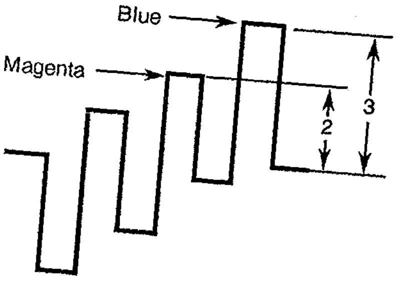
4. VIDEO GAIN ADJUSTMENT (RZ50)
   1) Apply the signal which includes the white peak component to the antenna input.
   2) Connect an oscilloscope to pin 16 of QZ30.
   3) Adjust RZ50 for 2Vp-p waveform amplitude.



PIP BOARD ADJUSTMENT

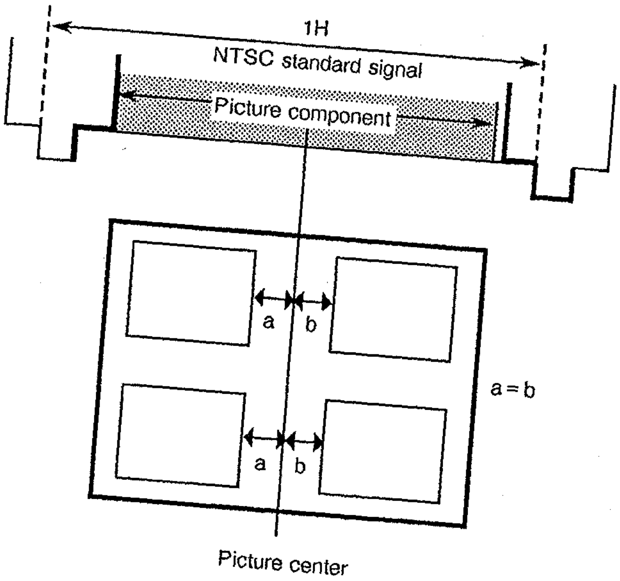
TINT ADJUSTMENT

1. Receive color-bar signal from color bar generator.
2. Connect oscilloscope to the emitter of QY18.
3. Adjust RY50 to obtain a blue bar to magenta bar ratio of 3 : 2 as shown below.


Blue
Magenta
3
2

READ CLOCK (PIP FRAME POSITION) ADJUSTMENT

1. Receive the pattern signal which shows its center on the main screen.
2. Call up the PIP screen.
3. Adjust ZY06 to equalize the distance "a" to "b" as shown below.


1H
NTSC standard signal
Picture component
a
b
a
b
a=b
Picture center

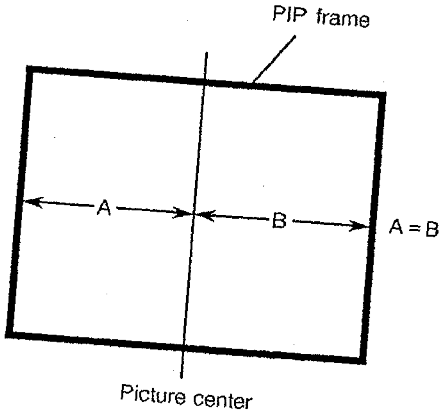
WHITE BALANCE ADJUSTMENT

1. Receive an active channel on the PIP screen.
2. Adjust RY52 (RED BIAS) and RY53 (BLU BIAS) alternately for proper white balance.

WRITE CLOCK (PIP PICTURE POSITION) ADJUSTMENT

1. Receive the pattern signal which shows the center on the PIP screen.
2. Adjust ZY05 to position the center of the signal to the center of the PIP screen.

(equalizing the distance "A" to "B" as shown below.)


PIP frame
A
B
A=B
Picture center

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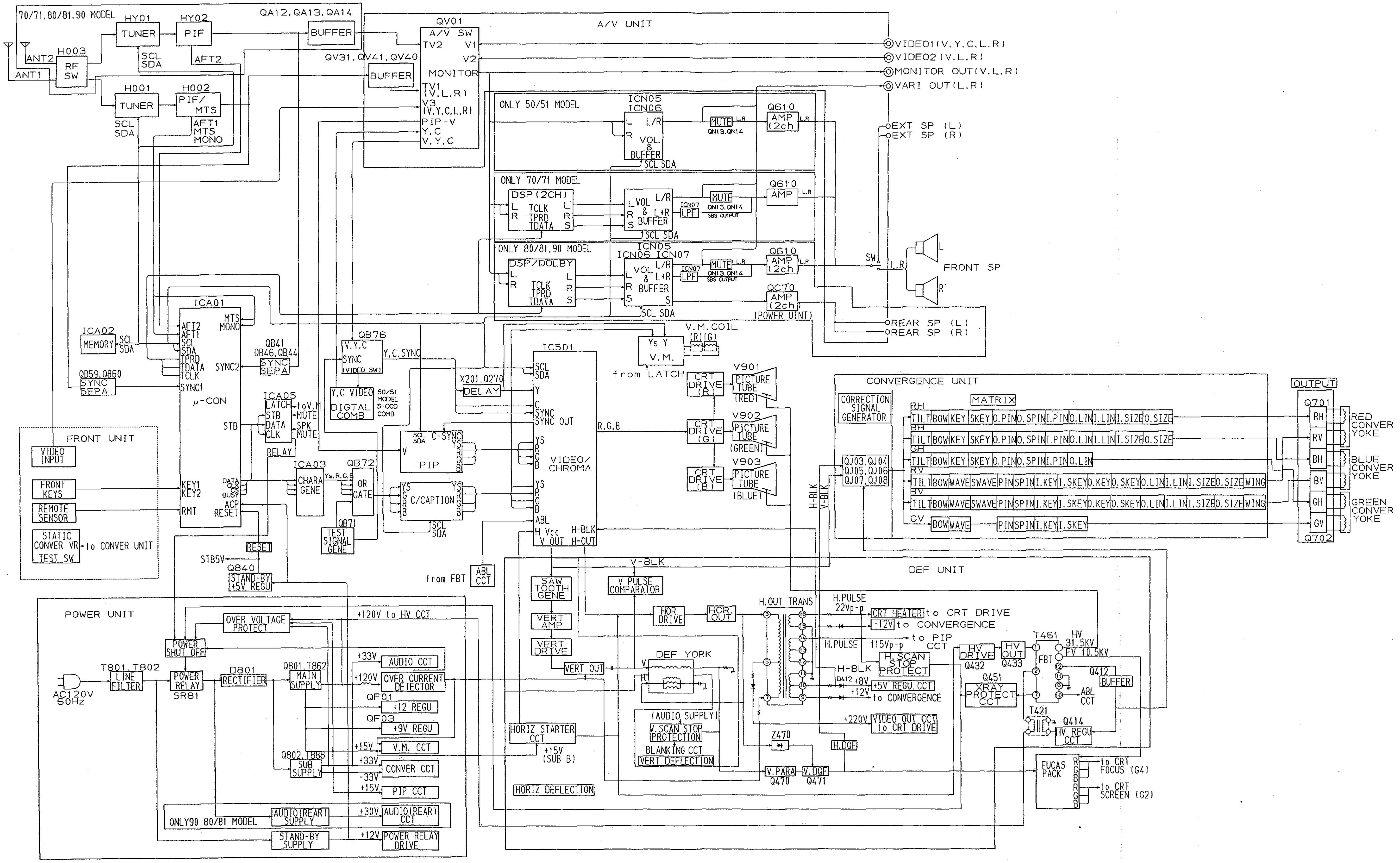
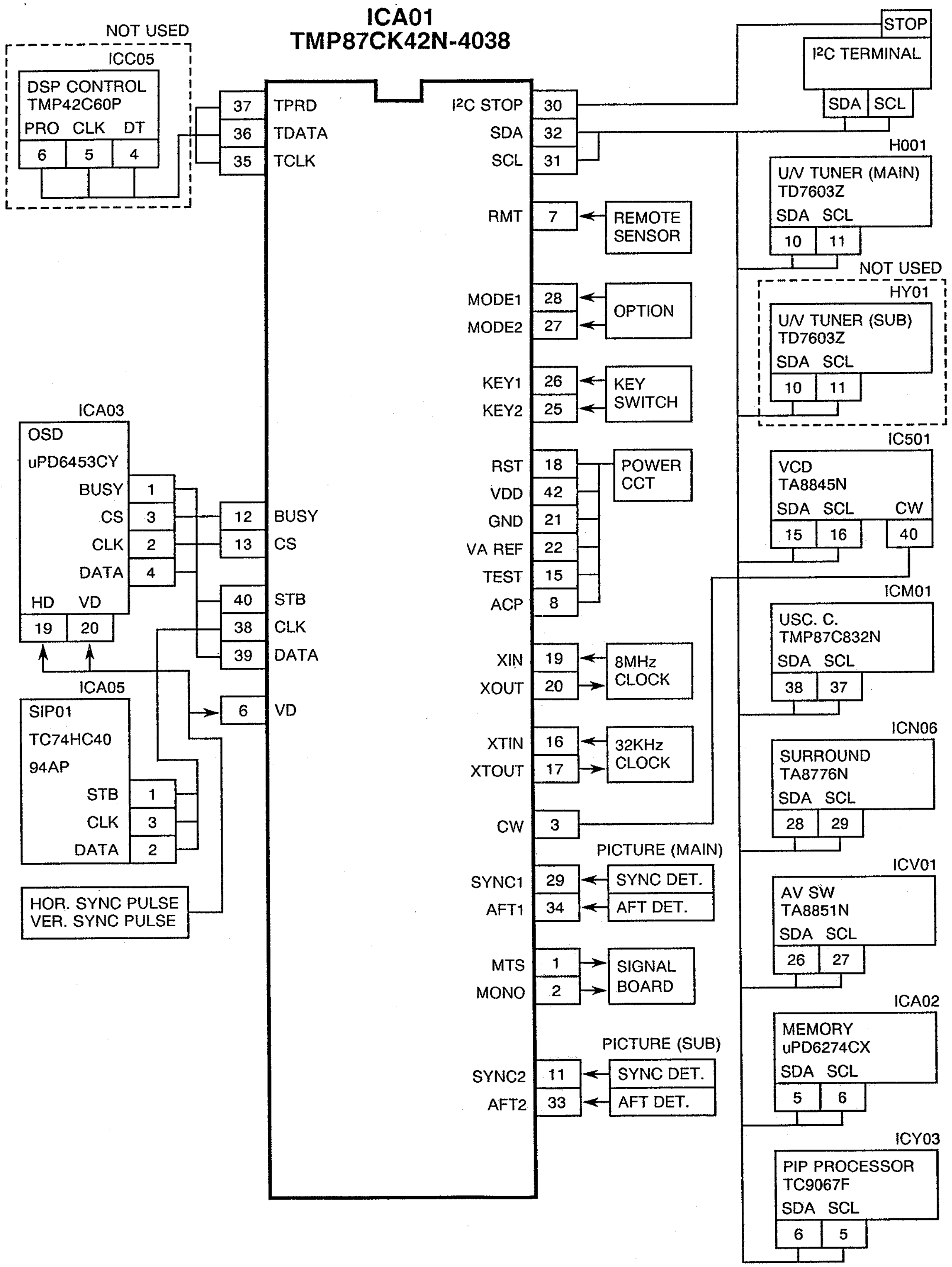
CHASSIS BLOCK DIAGRAM


70/71,80/81,90 MODEL
HY01
TUNER
HY02
PIF
QA12,QA13,QA14
BUFFER
ANT2
ANT1
H003
RF SW
SCL
SDA
AFT2
QV31,QV41,QV40
BUFFER
H001
TUNER
H002
PIF/MTS
AFT1
MTS
MONO
QV01
A/V SW
TV2
V1
V2
MONITOR
TV1 (V,L,R)
V3 (V,Y,C,L,R)
PIP-V
Y,C
V,Y,C
A/V UNIT
VIDEO1(V,Y,C,L,R)
VIDEO2(V,L,R)
MONITOR OUT(V,L,R)
VARI OUT(L,R)
EXT SP (L)
EXT SP (R)
ONLY 50/51 MODEL
ICN05
ICN06
L/R
VOL & BUFFER
MUTE
QN13,QN14
Q610
AMP (2ch)
SCL SDA
ONLY 70/71 MODEL
DSP(2CH)
TCLK
TPRD
TDATA
VOL & BUFFER
L+R
ICN07
LPF
SBS OUTPUT
ONLY 80/81,90 MODEL
DSP/DOLBY
ICN05
ICN06 ICN07
QC70
AMP (2ch)
(POWER UINT)
SW
FRONT SP
REAR SP (L)
REAR SP (R)
ICA01
AFT2
AFT1
SCL
SDA
TPRD
TDATA
TCLK
SYNC1
SYNC2
MTS
MONO
μ-CON
STB
KEY1
KEY2
RMT
DATA
CLK
BUSY
ACP
RESET
ICA02
MEMORY
QB59,QB60
SYNC SEPA
QB41
QB46,QB44
SYNC SEPA
ICA05
LATCH
STB
DATA
CLK
to V.M
MUTE
SPK MUTE
RELAY
ICA03
CHARA GENE
Ys,R,G,B
QB72
OR GATE
QB71
TEST SIGNAL GENE
QB76
V,Y,C
SYNC
(VIDEO SW)
Y,C,SYNC
Y,C VIDEO
DIGITAL COMB
50/51 MODEL S-CCD COMB
PIP
C-SYNC
C/CAPTION
FRONT UNIT
VIDEO INPUT
FRONT KEYS
REMOTE SENSOR
STATIC CONVER VR
TEST SW
to CONVER UNIT
RESET
STB5V
Q840
STAND-BY +5V REGU
X201,Q270
DELAY
IC501
VIDEO/CHROMA
SYNC OUT
ABL
H Vcc
H-BLK
V OUT
H-OUT
from FBT
ABL CCT
R,G,B
V.M.COIL
Ys Y
V.M.
from LATCH
CRT DRIVE (R)
CRT DRIVE (G)
CRT DRIVE (B)
V901 PICTURE TUBE (RED)
V902 PICTURE TUBE (GREEN)
V903 PICTURE TUBE (BLUE)
H-BLK
V-BLK
CONVERGENCE UNIT
CORRECTION SIGNAL GENERATOR
MATRIX
QJ03,QJ04
QJ05,QJ06
QJ07,QJ08
RH
BH
GH
RV
BV
GV
TILT
BOW
KEY
SKEY
O.PIN
O.SPIN
I.PIN
O.LIN
I.LIN
I.SIZE
O.SIZE
WAVE
SWAVE
PIN
SPIN
I.KEY
I.SKEY
O.KEY
O.SKEY
WING
OUTPUT
Q701
Q702
RED CONVER YOKE
BLUE CONVER YOKE
GREEN CONVER YOKE
DEF UNIT
SAW TOOTH GENE
VERT AMP
VERT DRIVE
V PULSE COMPARATOR
HOR DRIVE
HOR OUT
H.OUT TRANS
H.PULSE 22Vp-p
CRT HEATER to CRT DRIVE
-12V to CONVERGENCE
H.PULSE 115Vp-p
to PIP CCT
H-BLK
H.SCAN STOP PROTECT
D412 +8V
+5V REGU CCT
+12V to CONVERGENCE
+220V VIDEO OUT CCT to CRT DRIVE
DEF YORK
VERT OUT
(AUDIO SUPPLY)
V.SCAN STOP PROTECTION
BLANKING CCT
VERT DEFLECTION
HORIZ STARTER CCT
+15V (SUB B)
HORIZ DEFLECTION
Z470
H.DOF
V.PARA Q470
V.DOF Q471
T461
HV 31.5KV
FV 10.5KV
FBT
HV DRIVE Q432
HV OUT Q433
Q451 XRAY PROTECT CCT
Q412 BUFFER
ABL CCT
T421
Q414 HV REGU CCT
FUCAS PACK
to CRT FOCUS (G4)
to CRT SCREEN (G2)
POWER UNIT
AC120V 60Hz
T801,T802
LINE FILTER
POWER RELAY SR81
D801 RECTIFIER
POWER SHUT OFF
OVER VOLTAGE PROTECT
+120V to HV CCT
Q801,T862
MAIN SUPPLY
+33V AUDIO CCT
+120V OVER CURRENT DETECTOR
QF01 +12 REGU
QF03 +9V REGU
+15V V.M. CCT
Q802,T888
SUB SUPPLY
+33V CONVER CCT
-33V
+15V PIP CCT
ONLY90 80/81 MODEL
AUDIO(REAR) SUPPLY
+30V AUDIO(REAR) CCT
STAND-BY SUPPLY
+12V POWER RELAY DRIVE

I^2C-BUS SYSTEM BLOCK DIAGRAM

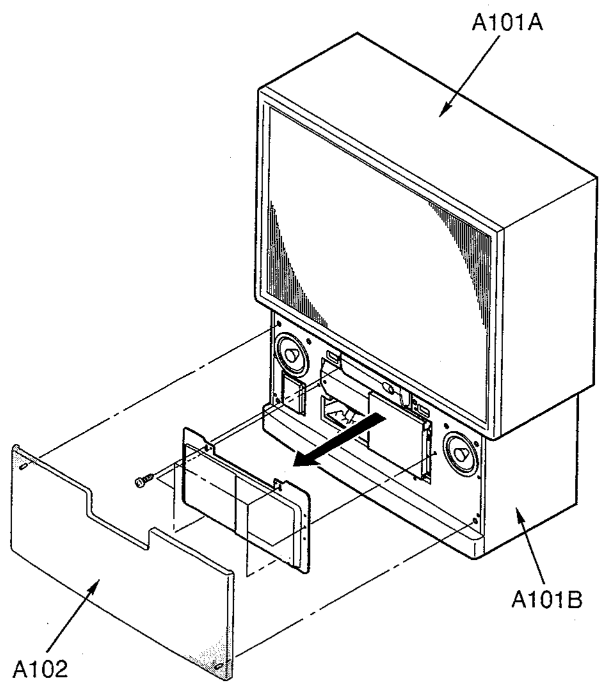

NOT USED
ICC05
DSP CONTROL
TMP42C60P
PRO CLK DT
6 5 4
ICA01
TMP87CK42N-4038
37 TPRD
36 TDATA
35 TCLK
I2C STOP 30
SDA 32
SCL 31
STOP
I2C TERMINAL
SDA SCL
H001
U/V TUNER (MAIN)
TD7603Z
SDA SCL
10 11
RMT 7
REMOTE SENSOR
MODE1 28
MODE2 27
OPTION
KEY1 26
KEY2 25
KEY SWITCH
NOT USED
HY01
U/V TUNER (SUB)
TD7603Z
SDA SCL
10 11
ICA03
OSD
uPD6453CY
BUSY 1
CS 3
CLK 2
DATA 4
HD VD
19 20
12 BUSY
13 CS
40 STB
38 CLK
39 DATA
6 VD
RST 18
VDD 42
GND 21
VA REF 22
TEST 15
ACP 8
POWER CCT
IC501
VCD
TA8845N
SDA SCL CW
15 16 40
ICM01
USC. C.
TMP87C832N
SDA SCL
38 37
XIN 19
XOUT 20
8MHz CLOCK
XTIN 16
XTOUT 17
32KHz CLOCK
ICN06
SURROUND
TA8776N
SDA SCL
28 29
ICA05
SIP01
TC74HC40
94AP
STB 1
CLK 3
DATA 2
CW 3
PICTURE (MAIN)
SYNC1 29
AFT1 34
SYNC DET.
AFT DET.
ICV01
AV SW
TA8851N
SDA SCL
26 27
HOR. SYNC PULSE
VER. SYNC PULSE
MTS 1
MONO 2
SIGNAL BOARD
ICA02
MEMORY
uPD6274CX
SDA SCL
5 6
PICTURE (SUB)
SYNC2 11
AFT2 33
SYNC DET.
AFT DET.
ICY03
PIP PROCESSOR
TC9067F
SDA SCL
6 5

MICROPROCESSOR TERMINAL NAMES AND OPERATION LOGIC

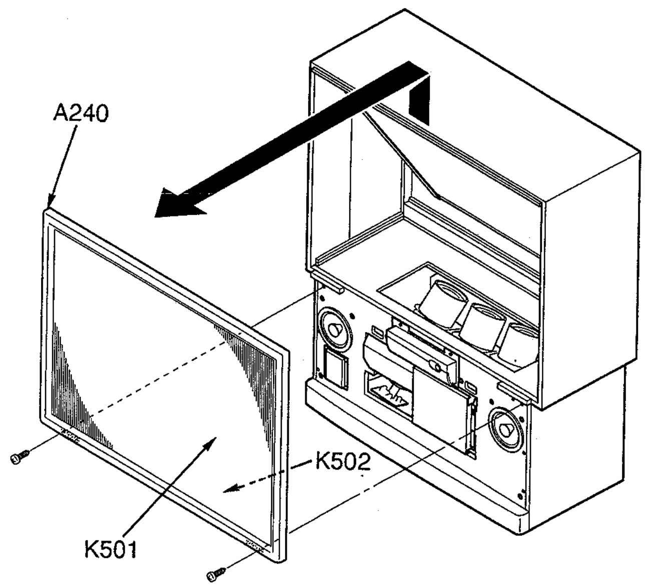
Pin No.	Name	Function	IN/OUT	Logic
1	MTS	MTS switching	OUT	Stereo, Monaural = H, SAP = L
2	MONO	Stereo switching	OUT	Stereo, SAP = L, Monaural switching = H
3	CW	Monochro B' cast det.	IN	Monochro B' cast = H, Color B' cast (usual) = L
4	—	Not in use	—	Open
5	LD	Para-Seri control terminal	OUT	Positive logic
6	VD	VER sync pulse det.	IN	Negative logic
7	RMT	Remote signal det.	IN	Negative logic
8	ACP	AC pulse count	IN	Pulse with cycle of 16.6ms
9	STR	STEREO switch	IN	STEREO = L
10	SAP	SAP switch	IN	SAP = L
11	SYNC2	PIP sync judge	IN	Positive logic
12	BUSY	OSD BUSY det.	IN	Positive logic
13	CS	OSD CS control	OUT	Negative logic
14	STOP	STOP operation control	IN	Negative logic, Pulled in 5V-1
15	TEST	Delivery test of IC	IN	Open
16	XTIN	Oscillation for SLOW MODE	IN	32 kHz
17	XTOUT		OUT	32 kHz
18	RESET	System reset	IN	Negative logic
19	XI	Oscillation for system clock	IN	8 MHz
20	XO		OUT	8 MHz
21	GND	Ground	—	Grounding, 0V connection
22	VA REF	Analogue standard voltage for A/D conversion	IN	Connected to 5V-1
23	—	Not in use	—	Grounding
24	—	Not in use	—	Grounding
25	KEY2	Local key input	IN	0 to 5V
26	KEY1	Local key input	IN	0 to 5V
27	MODE2	Option judge	IN	0 to 5V
28	MODE1	Option judge	IN	0 to 5V
29	SYNC1	SYNC pulse input	IN	Negative logic
30	I^2C STP	I^2C BUS STOP	IN	Negative logic
31	SCL	I^2C BUS CLOCK	OUT	No operation = H, Rising sync
32	SDA	I^2C BUS DATA	IN & OUT	Output to tuners, VCD IC, SRD IC and AV SW. Input and output to memory. Input and output to closed caption IC.
33	AFT2	PIP S-letter det.	IN	In receiving signal
34	AFT1	AFT S-letter det.	IN	In receiving signal
35	TCLK	T-BUS CLOCK	OUT	Rising sync
36	TDATA	T-BUS DATA	IN & OUT	Output to PIP module, DSP micom
37	TPRD	T-BUS PERIOD	OUT	Negative logic
38	CLK	Clock line	OUT	Rising sync
39	DATA	Data line	IN & OUT	Output to Seri-Para, OSD
40	STB	Seri-Para STROBE	OUT	Positive logic
41	X-RAY	Operational count in over-current protect circuit	IN	Positive logic
42	VDD	Power input	IN	5V

MECHANICAL DISASSEMBLY & CABINET REPLACEMENT PARTS LIST

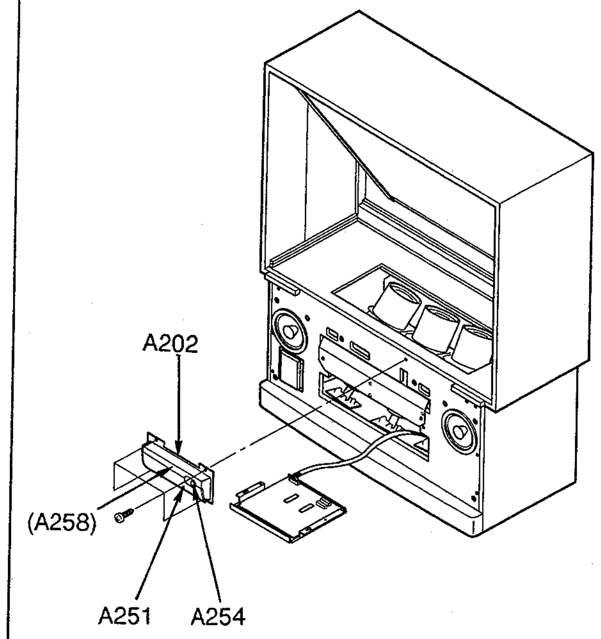
1 Speaker Grille Removal



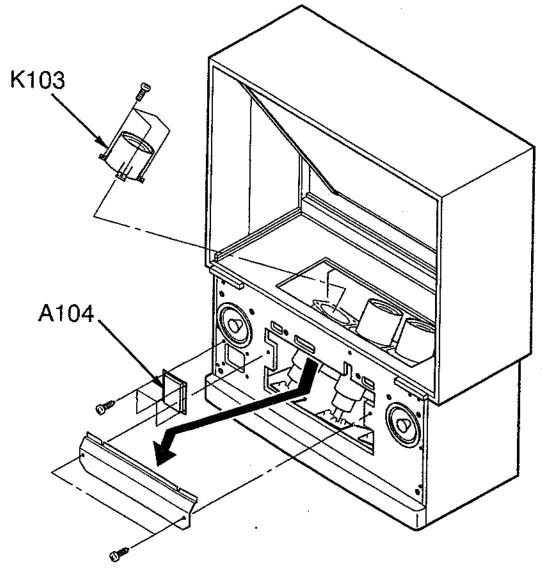
2 Front Mask Removal



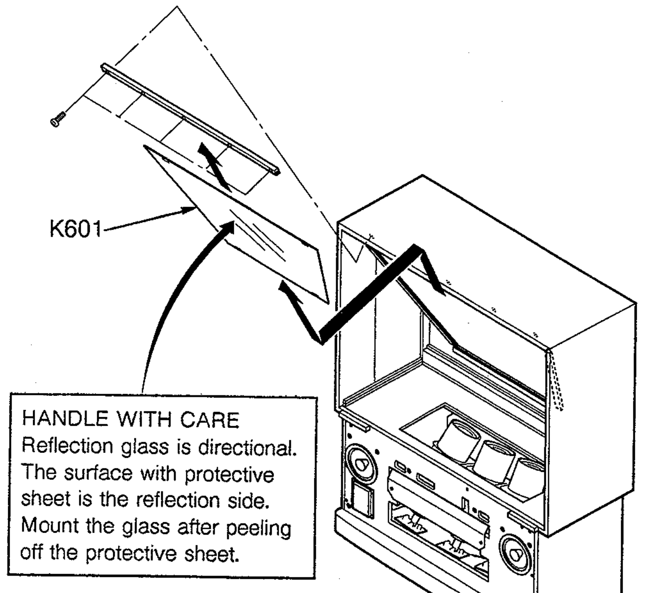
3 Convergence Board Removal



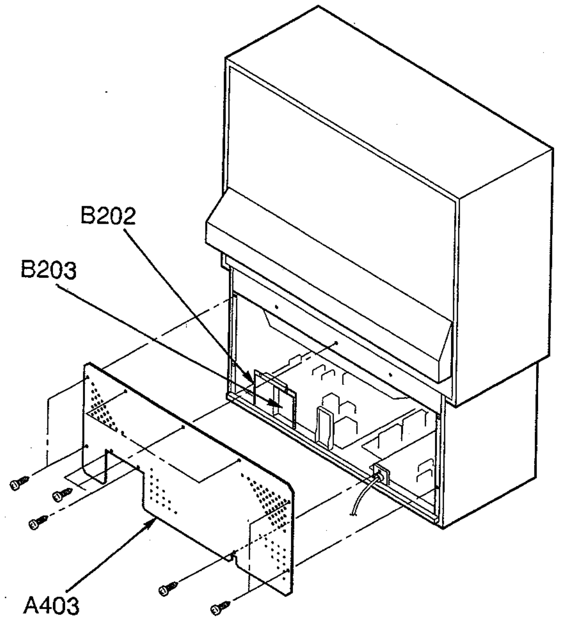
4 Control Panel Removal



5

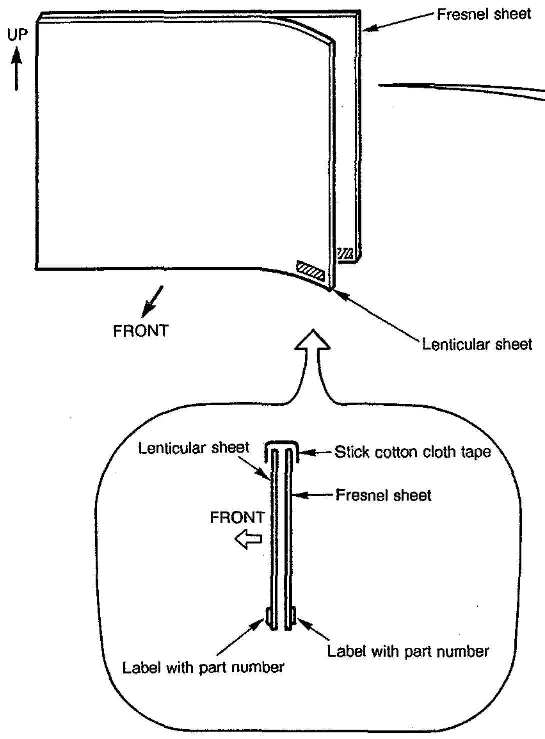


HANDLE WITH CARE
Reflection glass is directional.
The surface with protective sheet is the reflection side.
Mount the glass after peeling off the protective sheet.

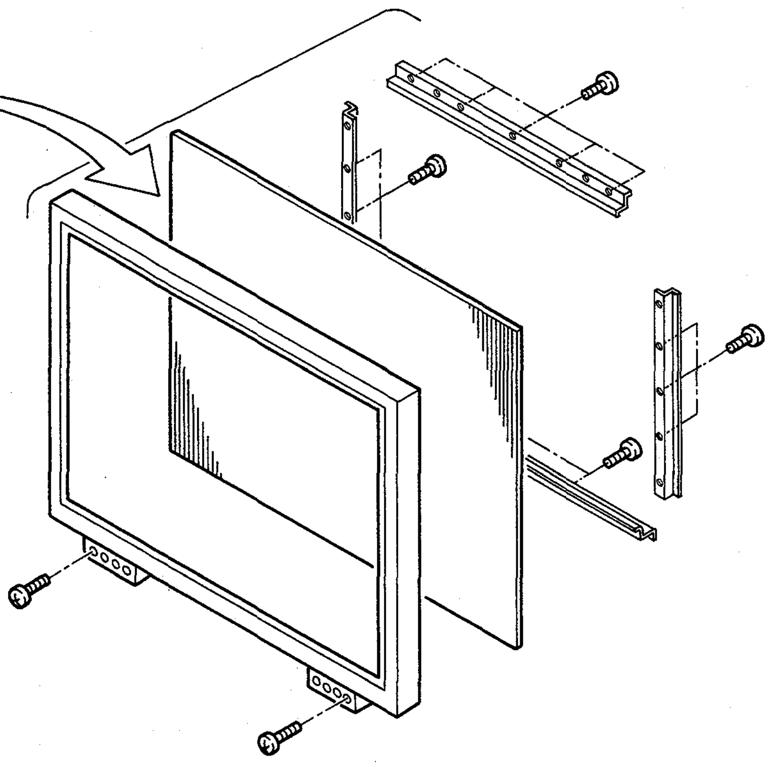


Location No.	Part No.	Description
A101A	23465131	Wood Cabinet, Upper (TP48C51)
A101A	23465163	Wood Cabinet, Upper (TP48C50)
A101A	23561872	Wood Cabinet, Upper (PJ48C50)
A101B	23465132	Wood Cabinet, Lower (TP48C51)
A101B	23465164	Wood Cabinet, Lower (TP48C50)
A101B	23465152	Wood Cabinet, Lower (PJ48C50)
A102	23416764	Grille, Speaker
A104	23448957	Cover (FOCUS PACK)
A111	23413256	Caster
A202	23885085	Control Panel
A227	72471068	Screw, BIDT2 4x12BZ
A231	72471068	Screw, BIDT2 4x12BZ
A240	23416771	Front Cover (BEZEL)
A251	23421547	Door
A254	23443749	Knob, POWER
A258	70368125	Push Catch for Door
A351	72471068	Screw, BIDT2 4x12BZ
A352	72471068	Screw, BIDT2 4x12BZ
A403	23822775	Back Board
A525	72471068	Screw, BIDT2 4x12BZ
A526	72471068	Screw, BIDT2 4x12BZ
A527	72471068	Screw, BIDT2 4x12BZ
A701	23524290	Carton Box
A702	23935184	Pad, Top
A703	23935185	Pad, Bottom
A705	23941638	Sheet, 46GM88T
A708	23941634	Sheet, 52GM88T
B202	23470072	Terminal Board
B203	23568496	Ornament, AV Terminal
K103	23430111	Delta, 77-A/B Assembly
K103	23430111	Delta, 77-A/B Assembly
K103	23430111	Delta, 77-A/B Assembly
K501	23837389	Screen, 48KB-L
K502	23837390	Screen, 48KB-F
K601	23430116	Mirror, 48(C)
K910	23120219	Remote Sensor, IR-9106A-K

ASSEMBLING OF FRONT SCREEN


Fresnel sheet
UP
FRONT
Lenticular sheet
Lenticular sheet
Stick cotton cloth tape
Fresnel sheet
FRONT
Label with part number
Label with part number

MOUNTING OF FRONT SCREEN



CLEANING OF LENS AND MIRROR

CAUTION : Do not hold the optical system parts (lens and mirror) with bare hand to avoid fingerprints on the surface of those parts.

HOW TO CLEAN LENS AND MIRROR

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
   For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid .... **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

HOW TO CLEAN SCREEN

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the stain away with a diluted neutral detergent soaked cloth.
2. Wipe the detergent away with a water soaked cloth.
3. Wipe the screen with a dry cloth to remove moisture on the screen.

Note : Absolutely do not use alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

Model TP48C50 : TP48C51 : PJ48C50

ABBREVIATIONS:

Capacitors......... CD : Ceramic Disk PF : Plastic Film EL : Electrolytic
Resistors........... CF : Carbon Film CC : Carbon Composition MF : Metal Film
OMF : Oxide Metal Film VR : Variable Resistor FR : Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C060	24763471	EL, 470μF, ±20%, 16V
C061	24203470	EL, 47μF, ±20%, 16V
C062	24763101	EL, 100μF, ±20%, 16V
C063	24205479	EL, 4.7μF, ±20%, 35V
C064	24797330	EL, 33μF, ±20%, 50V
C071	24232103	CD, 0.01μF, +80%, -20%
C072	24232103	CD, 0.01μF, +80%, -20%
C180	24085967	EL, 47μF, ±20%, 16V, Non-Polar
C187	24666221	EL, 220μF, ±20%, 16V
C188	24668100	EL, 10μF, ±20%, 35V
C189	24591104	PF, 0.1μF
C203	24206229	EL, 2.2μF, 50V
C206	24436270	CD, 27pF
C220	24474101	CD, 100pF, ±10%
C221	24206108	EL, 0.1μF, 50V
C222	24206108	EL, 0.1μF, 50V
C223	24206108	EL, 0.1μF, 50V
C224	24206478	EL, 0.47μF, 50V
C225	24794221	EL, 220μF, ±20%, 16V
C226	24763471	EL, 470μF, ±20%, 16V
C228	24473560	CD, 56pF
C230	24591182	PF, 1800pF
C240	24474820	CD, 82pF, ±10%
C241	24436330	CD, 33pF
C242	24436910	CD, 91pF
C263	24232103	CD, 0.01μF, +80%, -20%
C264	24591104	PF, 0.1μF
C265	24794221	EL, 220μF, ±20%, 16V
C266	24591104	PF, 0.1μF
C267	24232103	CD, 0.01μF, +80%, -20%
C268	24763471	EL, 470μF, ±20%, 16V
C270	24206229	EL, 2.2μF, 50V
C271	24205100	EL, 10μF, ±20%, 35V
C272	24794100	EL, 10μF, ±20%, 16V
C273	24206228	EL, 0.22μF, 50V
C274	24206229	EL, 2.2μF, 50V
C277	24591104	PF, 0.1μF
C280	24763101	EL, 100μF, ±20%, 16V
C281	24436101	CD, 100pF
C282	24436101	CD, 100pF
C283	24436101	CD, 100pF
C303	24666470	EL, 47μF, ±20%, 16V
C315	24677100	EL, 10μF, ±20%, 160V
C330	24214101	CD, 100pF, ±10%, 500V
C331	24676100	EL, 10μF, ±20%, 100V
C332	24677221	EL, 220μF, ±20%, 160V
C333	24214332	CD, 3300pF, ±10%, 500V
C334	24617912	EL, 2.2μF, ±10%, 50V
C335	24666470	EL, 47μF, ±20%, 16V
C336	24591123	PF, 0.012μF
C338	24591102	PF, 1000pF
C340	24591104	PF, 0.1μF
C344	24797229	EL, 2.2μF, ±20%, 50V
C391	24617912	EL, 2.2μF, ±10%, 50V
C393	24666101	EL, 100μF, ±20%, 16V
C394	24666101	EL, 100μF, ±20%, 16V
C401	24763101	EL, 100μF, ±20%, 16V
C402	24232103	CD, 0.01μF, +80%, -20%
C403	24203470	EL, 47μF, ±20%, 16V
C409	24474102	CD, 1000pF, ±10%
C412	24591123	PF, 0.012μF
C413	24591392	PF, 3900pF
C414	24797010	EL, 1μF, ±20%, 50V
C415	24214332	CD, 3300pF, ±10%, 500V
C417	24214391	CD, 390pF, ±10%, 500V
C418	24677100	EL, 10μF, ±20%, 160V
C420	24763101	EL, 100μF, ±20%, 16V
C421	24591104	PF, 0.1μF
C422	24212102	CD, 1000pF, ±10%
C423	24085942	EL, 10μF, ±20%, 16V, Non-Polar
C424	24538104	PF, 0.1μF
C425	24538104	PF, 0.1μF
C426	24677100	EL, 10μF, ±20%, 160V
C428	24214391	CD, 390pF, ±10%, 500V
C429	24214332	CD, 3300pF, ±10%, 500V
C430	24212152	CD, 1500pF, ±10%
⚠C431	24095778	PF, 2200pF, ±3%, 2kV
⚠C432	24095774	PF, 3300pF, ±3%, 1400V
⚠C433	24095774	PF, 3300pF, ±3%, 1400V

Location No.	Part No.	Description
C436	24828563	PF, 0.056μF, 200V
⚠C440	24095893	PF, 6200pF, ±3%, 1250V
⚠C441	24095893	PF, 6200pF, ±3%, 1250V
⚠C442	24095753	PF, 0.39μF, 200V
⚠C443	24095629	PF, 0.62μF, 200V
C445	24795222	EL, 2200μF, ±20%, 25V
C447	24679330	EL, 33μF, ±20%, 250V
C448	24640908	EL, 33μF, ±20%, 160V
C449	24666102	EL, 1000μF, ±20%, 16V
C450	24214472	CD, 4700pF, ±10%, 500V
C451	24669479	EL, 4.7μF, ±20%, 50V
C452	24666100	EL, 10μF, ±20%, 16V
C453	24212102	CD, 1000pF, ±10%
C457	24666100	EL, 10μF, ±20%, 16V
C458	24214102	CD, 1000pF, ±10%, 500V
C463	24212152	CD, 1500pF, ±10%
C466	24666102	EL, 1000μF, ±20%, 16V
C470	24669100	EL, 10μF, ±20%, 50V
C471	24538104	PF, 0.1μF
C472	24667100	EL, 10μF, ±20%, 25V
C473	24666100	EL, 10μF, ±20%, 16V
C476	24092338	CD, 270pF, ±10%, 2kV
C477	24092341	CD, 470pF, ±10%, 2kV
C481	24666220	EL, 22μF, ±20%, 16V
C501	24591333	PF, 0.033μF
C502	24591333	PF, 0.033μF
C507	24473010	CD, 1pF, ±20%
C508	24591472	PF, 4700pF
C509	24473120	CD, 12pF
C510	24206229	EL, 2.2μF, 50V
C514	24591333	PF, 0.033μF
C515	24206010	EL, 1μF, ±20%, 50V
C601	24591103	PF, 0.01μF
C602	24591103	PF, 0.01μF
C603	24206479	EL, 4.7μF, 50V
C604	24206479	EL, 4.7μF, 50V
C605	24669478	EL, 0.47μF, ±20%, 50V
C606	24669478	EL, 0.47μF, ±20%, 50V
C607	24667101	EL, 100μF, ±20%, 25V
C608	24667101	EL, 100μF, ±20%, 25V
C609	24667221	EL, 220μF, ±20%, 25V
C610	24669471	EL, 470μF, ±20%, 50V
C611	24669102	EL, 1000μF, ±20%, 50V
C612	24669102	EL, 1000μF, ±20%, 50V
C613	24591104	PF, 0.1μF
C614	24591104	PF, 0.1μF
C615	24085961	EL, 10μF, ±20%, 50V
C701	24436101	CD, 100pF
C702	24436220	CD, 22pF
C703	24436681	CD, 680pF
C704	24797101	EL, 100μF, ±20%, 50V
C705	24797101	EL, 100μF, ±20%, 50V
C706	24436101	CD, 100pF
C707	24436220	CD, 22pF
C708	24436681	CD, 680pF
C709	24797101	EL, 100μF, ±20%, 50V
C710	24797101	EL, 100μF, ±20%, 50V
C711	24436101	CD, 100pF
C712	24436220	CD, 22pF
C713	24436681	CD, 680pF
C714	24436101	CD, 100pF
C715	24436220	CD, 22pF
C716	24436681	CD, 680pF
C717	24797101	EL, 100μF, ±20%, 50V
C718	24797101	EL, 100μF, ±20%, 50V
C719	24436101	CD, 100pF
C720	24436220	CD, 22pF
C721	24436681	CD, 680pF
C722	24797101	EL, 100μF, ±20%, 50V
C723	24797101	EL, 100μF, ±20%, 50V
C724	24436101	CD, 100pF
C725	24436220	CD, 22pF
C726	24436681	CD, 680pF
C750	24794470	EL, 47μF, ±20%, 16V
C751	24794470	EL, 47μF, ±20%, 16V
C752	24538103	PF, 0.01μF
C753	24794101	EL, 100μF, ±20%, 16V
C754	24436820	CD, 82pF
C755	24538103	PF, 0.01μF
C756	24212222	CD, 2200pF, ±10%
C757	24538103	PF, 0.01μF
C758	24794470	EL, 47μF, ±20%, 16V
C759	24436101	CD, 100pF
C760	24436101	CD, 100pF
C761	24590472	PF, 4700pF
C762	24590472	PF, 4700pF
C763	24677100	EL, 10μF, ±20%, 160V
C764	24677470	EL, 47μF, ±20%, 160V
C765	24677470	EL, 47μF, ±20%, 160V
C766	24677100	EL, 10μF, ±20%, 160V
C767	24434560	CD, 56pF, ±10%, 500V
C768	24797101	EL, 100μF, ±20%, 50V
C769	24797101	EL, 100μF, ±20%, 50V
C770	24797101	EL, 100μF, ±20%, 50V
C771	24797101	EL, 100μF, ±20%, 50V
C772	24436300	CD, 30pF
C801	24095820	PF, 0.1μF, ±10%, 630V
⚠C802	24092300	CD, 0.01μF, +80%, −20%, AC250V
⚠C803	24092300	CD, 0.01μF, +80%, −20%, AC250V
⚠C804	24082001	PF, 0.47μF, ±20%, AC125V
C805	24095820	PF, 0.1μF, ±10%, 630V
C806	24092345	CD, 1000pF, ±10%, 2kV
C807	24538474	PF, 0.47μF
C809	24092345	CD, 1000pF, ±10%, 2kV
⚠C810	24086933	EL, 1000μF, ±20%, 200V
⚠C811	24094837	CD, 3300pF, AC400V
C812	24092300	CD, 0.01μF, +80%, −20%, AC250V
⚠C813	24094837	CD, 3300pF, AC400V
C814	24092335	CD, 150pF, ±10%, 2kV
C815	24214331	CD, 330pF, ±10%, 500V
C816	24591102	PF, 1000pF
C817	24214331	CD, 330pF, ±10%, 500V
C818	24617915	EL, 1μF, ±10%, 50V
C819	24591102	PF, 1000pF
C820	24214331	CD, 330pF, ±10%, 500V
C821	24676331	EL, 330μF, ±20%, 100V
⚠C822	24094820	CD, 2200pF, ±20%, AC400V
⚠C823	24094820	CD, 2200pF, ±20%, AC400V
C824	24092344	CD, 820pF, ±10%, 2kV
C825	24214331	CD, 330pF, ±10%, 500V
C826	24669222	EL, 2200μF, ±20%, 50V
C827	24214331	CD, 330pF, ±10%, 500V
C828	24092344	CD, 820pF, ±10%, 2kV
C829	24669222	EL, 2200μF, ±20%, 50V

Location No.	Part No.	Description
C830	24092300	CD, 0.01μF, +80%, −20%, AC250V
C831	24669221	EL, 220μF, ±20%, 50V
C832	24669010	EL, 1μF, ±20%, 50V
⚠C833	24094820	CD, 2200pF, ±20%, AC400V
⚠C834	24094820	CD, 2200pF, ±20%, AC400V
⚠C835	24094820	CD, 2200pF, ±20%, AC400V
C840	24764102	EL, 1000μF, ±20%, 25V
C842	24095680	PF, 0.1μF, 200V
C843	24591104	PF, 0.1μF
C844	24761102	EL, 1000μF, ±20%, 6.3V
C845	24763471	EL, 470μF, ±20%, 16V
C846	24762221	EL, 220μF, ±20%, 10V
C859	24092345	CD, 1000pF, ±10%, 2kV
C860	24591102	PF, 1000pF
C861	24214331	CD, 330pF, ±10%, 500V
C862	24214331	CD, 330pF, ±10%, 500V
C863	24676101	EL, 100μF, ±20%, 100V
C864	24092335	CD, 150pF, ±10%, 2kV
C865	24092346	CD, 1200pF, ±10%, 2kV
C866	24092345	CD, 1000pF, ±10%, 2kV
C867	24591104	PF, 0.1μF
C868	24214331	CD, 330pF, ±10%, 500V
C869	24591102	PF, 1000pF
C870	24617915	EL, 1μF, ±10%, 50V
C871	24669220	EL, 22μF, ±20%, 50V
C881	24092341	CD, 470pF, ±10%, 2kV
C882	24092341	CD, 470pF, ±10%, 2kV
C883	24214821	CD, 820pF, ±10%, 500V
C884	24086917	EL, 470μF, ±20%, 160V
C885	24092344	CD, 820pF, ±10%, 2kV
⚠C886	24082001	PF, 0.47μF, ±20%, AC125V
C887	24214331	CD, 330pF, ±10%, 500V
C888	24092337	CD, 220pF, ±10%, 2kV
C889	24669222	EL, 2200μF, ±20%, 50V
C890	24092338	CD, 270pF, ±10%, 2kV
C891	24669222	EL, 2200μF, ±20%, 50V
C892(U401)	24086917	EL, 470μF, ±20%, 160V
C892(U801)	24677101	EL, 100μF, ±20%, 160V
C893	24214102	CD, 1000pF, ±10%, 500V
C894	24214102	CD, 1000pF, ±10%, 500V
C895	24092300	CD, 0.01μF, +80%, −20%, AC250V
C896	24214821	CD, 820pF, ±10%, 500V
C897	24214821	CD, 820pF, ±10%, 500V
C898	24232103	CD, 0.01μF, +80%,−20%
C899	24214331	CD, 330pF, ±10%, 500V
C902	24211102	CD, 1000pF, ±10%, 2kV
C903	24211102	CD, 1000pF, ±10%, 2kV
C904	24211102	CD, 1000pF, ±10%, 2kV
C905	24794101	EL, 100μF, ±20%, 16V
C906	24794101	EL, 100μF, ±20%, 16V
C907	24794101	EL, 100μF, ±20%, 16V
C908	24232103	CD, 0.01μF, +80%, −20%
C909	24232103	CD, 0.01μF, +80%, −20%
C910	24797478	EL, 0.47μF, ±20%, 50V
C911	24436511	CD, 510pF
C912	24436821	CD, 820pF
C913	24436751	CD, 750pF
C914	24203100	EL, 10μF, ±20%, 16V
C915	24794471	EL, 470μF, ±20%, 16V
C916	24203100	EL, 10μF, ±20%, 16V
C918	24679330	EL, 33μF, ±20%, 250V
C919	24679330	EL, 33μF, ±20%, 250V

Location No.	Part No.	Description
C920	24679330	EL, 33μF, ±20%, 250V
C922	24794102	EL, 1000μF, ±20%, 16V
C924	24232103	CD, 0.01μF, +80%, −20%
CA03	24474101	CD, 100pF, ±10%
CA08	24476103	CD, 0.01μF, ±30%, 16V
CA16	24473120	CD, 12pF
CA17	24473120	CD, 12pF
CA18	24232103	CD, 0.01μF, +80%, −20%
CA19	24590104	PF, 0.1μF
CA20	24591104	PF, 0.1μF
CA21	24436221	CD, 220pF
CA22	24794100	EL, 10μF, ±20%, 16V
CA23	24794100	EL, 10μF, ±20%, 16V
CA26	24794100	EL, 10μF, ±20%, 16V
CA29	24474820	CD, 82pF, ±10%
CA41	24591103	PF, 0.01μF
CA42	24794100	EL, 10μF, ±20%, 16V
CA47	24761222	EL, 2200μF, ±20%, 6.3V
CA48	24665101	EL, 100μF, ±20%, 10V
CA50	24474102	CD, 1000pF, ±10%
CA51	24474102	CD, 1000pF, ±10%
CA53	24474101	CD, 100pF, ±10%
CA54	24794100	EL, 10μF, ±20%, 16V
CA65	24794100	EL, 10μF, ±20%, 16V
CB57	24206229	EL, 2.2μF, 50V
CB58	24591102	PF, 1000pF
CB59	24474561	CD, 560pF, ±10%
CB60	24591132	PF, 1300pF
CB71	24436470	CD, 47pF
CB72	24436820	CD, 82pF
CB73	24203470	EL, 47μF, ±20%, 16V
CB74	24206010	EL, 1μF, 50V
CB75	24794100	EL, 10μF, ±20%, 16V
CF04	24794101	EL, 100μF, ±20%, 16V
CF07	24795101	EL, 100μF, ±20%, 25V
CF08	24795101	EL, 100μF, ±20%, 25V
CF23	24794101	EL, 100μF, ±20%, 16V
CG01	24797220	EL, 22μF, ±20%, 50V
CG02	24794222	EL, 2200μF, ±20%, 16V
CG03	24538333	PF, 0.033μF
CG04	24669479	EL, 4.7μF, ±20%, 50V
CJ01	24794101	EL, 100μF, ±20%, 16V
CJ02	24538334	PF, 0.33μF
CJ03	24538334	PF, 0.33μF
CJ04	24794470	EL, 47μF, ±20%, 16V
CJ05	24794101	EL, 100μF, ±20%, 16V
CJ06	24538334	PF, 0.33μF
CJ07	24538334	PF, 0.33μF
CJ08	24794470	EL, 47μF, ±20%, 16V
CJ09	24436361	CD, 360pF
CJ10	24794100	EL, 10μF, ±20%, 16V
CJ11	24538224	PF, 0.22μF
CJ12	24538473	PF, 0.047μF
CJ13	24794100	EL, 10μF, ±20%, 16V
CJ14	24232473	CD, 0.047μF, +80%, −20%
CJ15	24797229	EL, 2.2μF, ±20%, 50V
CJ16	24591132	PF, 1300pF
CJ17	24797229	EL, 2.2μF, ±20%, 50V
CJ18	24598331	PF, 330pF
CJ19	24591472	PF, 4700pF
CJ20	24538224	PF, 0.22μF
CJ21	24794101	EL, 100μF, ±20%, 16V
CJ22	24794101	EL, 100μF, ±20%, 16V
CJ23	24794101	EL, 100μF, ±20%, 16V

Location No.	Part No.	Description
CJ24	24794101	EL, 100μF, ±20%, 16V
CJ25	24794100	EL, 10μF, ±20%, 16V
CJ26	24797010	EL, 1μF, ±20%, 50V
CJ27	24598331	PF, 330pF
CJ28	24538124	PF, 0.12μF
CJ29	24538124	PF, 0.12μF
CJ30	24538124	PF, 0.12μF
CJ31	24538124	PF, 0.12μF
CJ51	24794470	EL, 47μF, ±20%, 16V
CJ52	24794470	EL, 47μF, ±20%, 16V
CJ53	24794470	EL, 47μF, ±20%, 16V
CJ54	24794470	EL, 47μF, ±20%, 16V
CJ55	24538473	PF, 0.047μF
CJ56	24436561	CD, 560pF
CJ57	24232473	CD, 0.047μF, +80%, −20%
CJ58	24232473	CD, 0.047μF, +80%, −20%
CJ59	24232473	CD, 0.047μF, +80%, −20%
CJ60	24794470	EL, 47μF, ±20%, 16V
CJ61	24538104	PF, 0.1μF
CJ80	24794100	EL, 10μF, ±20%, 16V
CJ81	24538224	PF, 0.22μF
CM01	24092017	CD, 0.1μF, +80%, −20%, 12V
CM04	24085970	EL, 10μF, ±20%, 16V, Non-Polar
CM05	24436301	CD, 300pF
CM33	24092017	CD, 0.1μF, +80%, −20%, 12V
CM42	24092017	CD, 0.1μF, +80%, −20%, 12V
CM43	24202221	EL, 220μF, ±20%, 10V
CM65	24501102	PF, 1000pF
CM66	24538104	PF, 0.1μF
CM68	24232103	CD, 0.01μF, +80%, −20%
CM69	24203101	EL, 100μF, ±20%, 16V
CM71	24538104	PF, 0.1μF
CM72	24206010	EL, 1μF, 50V
CM73	24538103	PF, 0.01μF
CM74	24206010	EL, 1μF, ±20%, 50V
CN15	24763221	EL, 220μF, ±20%, 16V
CN48	24794471	EL, 470μF, ±20%, 16V
CN49	24794100	EL, 10μF, ±20%, 16V
CN50	24206479	EL, 4.7μF, 50V
CN51	24794100	EL, 10μF, ±20%, 16V
CN52	24794100	EL, 10μF, ±20%, 16V
CN53	24206479	EL, 4.7μF, 50V
CN54	24763101	EL, 100μF, ±20%, 16V
CN56	24206479	EL, 4.7μF, 50V
CN57	24206479	EL, 4.7μF, 50V
CN58	24591393	PF, 0.039μF
CN59	24591103	PF, 0.01μF
CN60	24591393	PF, 0.039μF
CN61	24591393	PF, 0.039μF
CN64	24591562	PF, 5600pF
CN81	24794100	EL, 10μF, ±20%, 16V
CN82	24794100	EL, 10μF, ±20%, 16V
CN83	24206010	EL, 1μF, ±20%, 50V
CN84	24206010	EL, 1μF, ±20%, 50V
CN85	24794100	EL, 10μF, ±20%, 16V
CN86	24794100	EL, 10μF, ±20%, 16V
CN88	24794100	EL, 10μF, ±20%, 16V
CN91	24763471	EL, 470μF, ±20%, 16V
CN93	24206339	EL, 3.3μF, 50V
CN94	24794100	EL, 10μF, ±20%, 16V
CN96	24794220	EL, 22μF, ±20%, 16V
CN97	24794471	EL, 470μF, ±20%, 16V
CN98	24232103	CD, 0.01μF, +80%, −20%

Location No.	Part No.	Description
CS03	24436391	CD, 390pF
CS04	24206010	EL, 1μF, ±20%, 50V
CS05	24203100	EL, 10μF, ±20%, 16V
CS06	24203100	EL, 10μF, ±20%, 16V
CS07	24436391	CD, 390pF
CS08	24206010	EL, 1μF, ±20%, 50V
CS09	24436391	CD, 390pF
CS10	24206229	EL, 2.2μF, 50V
CS11	24436391	CD, 390pF
CS12	24206229	EL, 2.2μF, 50V
CS13	24436391	CD, 390pF
CS14	24436391	CD, 390pF
CS15	24436391	CD, 390pF
CS16	24206229	EL, 2.2μF, 50V
CS17	24436391	CD, 390pF
CS23	24203100	EL, 10μF, ±20%, 16V
CS24	24203100	EL, 10μF, ±20%, 16V
CS30	24206229	EL, 2.2μF, 50V
CS31	24206229	EL, 2.2μF, 50V
CS32	24206229	EL, 2.2μF, 50V
CV01	24763101	EL, 100μF, ±20%, 16V
CV02	24203470	EL, 47μF, ±20%, 16V
CV03	24085939	EL, 4.7μF, ±20%, 25V, Non-Polar
CV04	24203100	EL, 10μF, ±20%, 16V
CV05	24203100	EL, 10μF, ±20%, 16V
CV06	24203100	EL, 10μF, ±20%, 16V
CV08	24762102	EL, 1000μF, ±20%, 10V
CV09	24203100	EL, 10μF, ±20%, 16V
CV10	24203100	EL, 10μF, ±20%, 16V
CV11	24232103	CD, 0.01μF, +80%, −20%
CV13	24232103	CD, 0.01μF, +80%, −20%
CV14	24232103	CD, 0.01μF, +80%, −20%
CV16	24203100	EL, 10μF, ±20%, 16V
CV18	24763471	EL, 470μF, ±20%, 16V
CV21	24436150	CD, 15pF
CV22	24203470	EL, 47μF, ±20%, 16V
CV26	24763471	EL, 470μF, ±20%, 16V
CV40	24794470	EL, 47μF, ±20%, 16V
CV41	24212102	CD, 1000pF, ±10%
CV44	24436270	CD, 27pF
CV47	24476103	CD, 0.01μF, ±30%, 16V
CV48	24474102	CD, 1000pF, ±10%
CV60	24203470	EL, 47μF, ±20%, 16V
CV61	24232103	CD, 0.01μF, +80%, −20%
CV70	24762102	EL, 1000μF, ±20%, 10V
CV99	24232103	CD, 0.01μF, +80%, −20%
CY01	24092293	Chip, 0.1μF, +80%, −20%, 25V
CY02	24591202	PF, 2000pF
CY03	24591223	PF, 0.022μF
CY04	24092293	Chip, 0.1μF, +80%, −20%, 25V
CY05	24774121	Chip, 120pF, CH
CY06	24781201	Chip, 200pF, SL
CY07	24591562	PF, 5600pF
CY08	24781221	Chip, 220pF, SL
CY09	24781102	Chip, 1000pF, SL
CY10	24206010	EL, 1μF, ±20%, 50V
CY11	24591183	PF, 0.018μF
CY12	24206479	EL, 4.7μF, 50V
CY13	24591102	PF, 1000pF
CY14	24206010	EL, 1μF, ±20%, 50V
CY15	24814103	Chip, 0.01μF, +80%, −20%
CY16	24781390	Chip, 39pF, SL
CY17	24781301	Chip, 300pF, SL

Location No.	Part No.	Description
CY18	24206478	EL, 0.47μF, 50V
CY19	24203100	EL, 10μF, ±20%, 16V
CY20	24814103	Chip, 0.01μF, +80%, –20%
CY21	24781470	Chip, 47pF, SL
CY22	24781111	Chip, 110pF, SL
CY23	24781101	Chip, 100pF, SL
CY24	24203101	EL, 100μF, ±20%, 16V
CY25	24591104	PF, 0.1μF
CY26	24814103	Chip, 0.01μF, +80%, –20%
CY27	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY28	24206338	EL, 0.33μF, 50V
CY29	24814222	Chip, 2200pF, +80%, –20%
CY30	24781120	Chip, 12pF, SL
CY31	24814103	Chip, 0.01μF, +80%, –20%
CY32	24206010	EL, 1μF, ±20%, 50V
CY33	24814103	Chip, 0.01μF, +80%, –20%
CY34	24203220	EL, 22μF, ±20%, 16V
CY35	24781910	Chip, 91pF, SL
CY36	24781101	Chip, 100pF, SL
CY37	24781910	Chip, 91pF, SL
CY38	24781101	Chip, 100pF, SL
CY39	24781820	Chip, 82pF, SL
CY41	24203101	EL, 100μF, ±20%, 16V
CY42	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY43	24206229	EL, 2.2μF, 50V
CY44	24206229	EL, 2.2μF, 50V
CY45	24206229	EL, 2.2μF, 50V
CY46	24781330	Chip, 33pF, SL
CY47	24781330	Chip, 33pF, SL
CY48	24781330	Chip, 33pF, SL
CY49	24781330	Chip, 33pF, SL
CY60	24781330	Chip, 33pF, SL
CY61	24781101	Chip, 100pF, SL
CY62	24781330	Chip, 33pF, SL
CY63	24092294	Chip, 0.33μF, +80%, –20%, 16V
CY65	24781102	Chip, 1000pF, SL
CY66	24781102	Chip, 1000pF, SL
CY69	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY70	24203101	EL, 100μF, ±20%, 16V
CY71	24781330	Chip, 33pF, SL
CY72	24781330	Chip, 33pF, SL
CY73	24781330	Chip, 33pF, SL
CY74	24781330	Chip, 33pF, SL
CY75	24774030	Chip, 3pF, ±0.25pF, CH
CY76	24774030	Chip, 3pF, ±0.25pF, CH
CY78	24203100	EL, 10μF, ±20%, 16V
CY79	24203100	EL, 10μF, ±20%, 16V
CY80	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY81	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY82	24206229	EL, 2.2μF, 50V
CY83	24206229	EL, 2.2μF, 50V
CY84	24204330	EL, 33μF, ±20%, 25V
CY86	24206010	EL, 1μF, ±20%, 50V
CY87	24203100	EL, 10μF, ±20%, 16V
CY88	24781111	Chip, 110pF, SL
CY89	24206010	EL, 1μF, ±20%, 50V
CY90	24591683	PF, 0.068μF
CY91	24781180	Chip, 18pF, SL
CY92	24781180	Chip, 18pF, SL
CY93	24206010	EL, 1μF, ±20%, 50V
CY94	24781470	Chip, 47pF, SL
CY95	24781470	Chip, 47pF, SL
CY96	24781470	Chip, 47pF, SL
CY97	24781330	Chip, 33pF, SL

Location No.	Part No.	Description
CY100	24781201	Chip, 200pF, SL
CY102	24814103	Chip, 0.01μF, +80%, –20%
CY103	24781111	Chip, 110pF, SL
CY104	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY105	24092293	Chip, 0.1μF, +80%, –20%, 25V
CY106	24781182	Chip, 1800pF, SL
CZ01	24763101	EL, 100μF, ±20%, 16V
CZ02	24232103	CD, 0.01μF, +80%, –20%
CZ03	24436110	CD, 11pF
CZ05	24232103	CD, 0.01μF, +80%, –20%
CZ06	24232103	CD, 0.01μF, +80%, –20%
CZ07	24206339	EL, 3.3μF, 50V
CZ08	24232103	CD, 0.01μF, +80%, –20%
CZ09	24203100	EL, 10μF, ±20%, 16V
CZ10	24232103	CD, 0.01μF, +80%, –20%
CZ12	24436220	CD, 22pF
CZ13	24436680	CD, 68pF
CZ14	24436220	CD, 22pF
CZ15	24436560	CD, 56pF
CZ16	24203220	EL, 22μF, ±20%, 16V
CZ17	24436181	CD, 180pF
CZ18	24436620	CD, 62pF
CZ19	24436200	CD, 20pF
CZ22	24436100	CD, 10pF, ±0.25pF
CZ23	24436101	CD, 100pF
CZ24	24436200	CD, 20pF
CZ25	24212102	CD, 1000pF, ±10%
CZ37	24436101	CD, 100pF
CZ38	24206010	EL, 1μF, ±20%, 50V
CZ39	24206479	EL, 4.7μF, 50V
CZ40	24436121	CD, 120pF
CZ41	24206479	EL, 4.7μF, 50V
CZ42	24206479	EL, 4.7μF, 50V
CZ43	24232103	CD, 0.01μF, +80%, –20%
CZ45	24795330	EL, 33μF, ±20%, 25V
CZ46	24206479	EL, 4.7μF, 50V
CZ47	24206479	EL, 4.7μF, 50V
CZ48	24206010	EL, 1μF, ±20%, 50V
CZ49	24206108	EL, 0.1μF, 50V
CZ59	24436390	CD, 39pF
CZ63	24795330	EL, 33μF, ±20%, 25V
CZ64	24436560	CD, 56pF
CZ65	24436241	CD, 240pF
CZ67	24232103	CD, 0.01μF, +80%, –20%
CZ68	24232103	CD, 0.01μF, +80%, –20%
CZ69	24232103	CD, 0.01μF, +80%, –20%
CZ70	24232103	CD, 0.01μF, +80%, –20%

RESISTORS

R001	24366332	CF, 3300 ohm
R060	24366101	CF, 100 ohm
R061	24366101	CF, 100 ohm
R201	24366102	CF, 1k ohm
R202	24366102	CF, 1k ohm
R203	24366102	CF, 1k ohm
R204	24366332	CF, 3300 ohm
R205	24366821	CF, 820 ohm
R207	24366821	CF, 820 ohm
R210	24366151	CF, 150 ohm
R211	24366562	CF, 5600 ohm
R212	24366101	CF, 100 ohm
R213	24366334	CF, 330k ohm
R221	24366201	CF, 200 ohm
R222	24366201	CF, 200 ohm

Location No.	Part No.	Description
R223	24366201	CF, 200 ohm
R224	24366102	CF, 1k ohm
R225	24366333	CF, 33k ohm
R226	24366184	CF, 180k ohm
R232	24366221	CF, 220 ohm
R241	24366681	CF, 680 ohm
R242	24366223	CF, 22k ohm
R247	24366561	CF, 560 ohm
R261	24366472	CF, 4700 ohm
R263	24366223	CF, 22k ohm
R267	24366153	CF, 15k ohm
R268	24366184	CF, 180k ohm
R269	24366562	CF, 5600 ohm
R270	24366184	CF, 180k ohm
R271	24366103	CF, 10k ohm
R273	24366115	CF, 1.1M ohm
R274	24366514	CF, 510k ohm
R276	24366221	CF, 220 ohm
R277	24366221	CF, 220 ohm
R278	24366221	CF, 220 ohm
R279	24366105	CF, 1M ohm
R285	24366102	CF, 1k ohm
R287	24366473	CF, 47k ohm
R288	24366154	CF, 150k ohm
R289	24366223	CF, 22k ohm
R290	24366223	CF, 22k ohm
⚠R301	24322209	OMF, 2 ohm, 1W
⚠R302	24322209	OMF, 2 ohm, 1W
R303	24381243	OMF, 24k ohm, 1/2W
R304	24366103	CF, 10k ohm
R305	24366104	CF, 100k ohm
R306	24366473	CF, 47k ohm
R307	24366104	CF, 100k ohm
R308	24366113	CF, 11k ohm
⚠R309	24321229	OMF, 2.2 ohm, 1/2W
⚠R310	24321229	OMF, 2.2 ohm, 1/2W
R311	24552472	OMF, 4700 ohm, 1/2W
R312	24552562	OMF, 5600 ohm, 1/2W
R313	24552820	OMF, 82 ohm, 1/2W
R314	24366222	CF, 2200 ohm
⚠R315	24000439	FR, 1.0 ohm, 1/2W
R321	24366472	CF, 4700 ohm
R322	24366101	CF, 100 ohm
R323	24552331	OMF, 330 ohm, 1/2W
R325	24366104	CF, 100k ohm
⚠R331	24382102	OMF, 1k ohm, 1W
⚠R332	24382102	OMF, 1k ohm, 1W
⚠R333	24382102	OMF, 1k ohm, 1W
R339	24366823	CF, 82k ohm
R340	24366331	CF, 330 ohm
R341	24382221	OMF, 220 ohm, 1W
R342	24366562	CF, 5600 ohm
R350	24366101	CF, 100 ohm
R380	24366151	CF, 150 ohm
R381	24367203	CF, 20k ohm, ±2%
R382	24367103	CF, 10k ohm, ±2%
R383	24366102	CF, 1k ohm
R390	24366103	CF, 10k ohm
R391	24366472	CF, 4700 ohm
R392	24366223	CF, 22k ohm
R393	24366472	CF, 4700 ohm
R394	24366153	CF, 15k ohm
R396	24066863	VR, 10k ohm, 0.3W
R397	24066865	VR, 2k ohm, 0.3W

Location No.	Part No.	Description
R398	24366102	CF, 1k ohm
R401	24366391	CF, 390 ohm
R403	24552561	OMF, 560 ohm, 1/2W
R405	24552152	OMF, 1500 ohm, 1/2W
R407	24366103	CF, 10k ohm
R408	24366223	CF, 22k ohm
R409	24366133	CF, 13k ohm
R411	24366391	CF, 390 ohm
R412	24366562	CF, 5600 ohm
R413	24366181	CF, 180 ohm
⚠R415	24553242	OMF, 2400 ohm, 1W
⚠R416	24383682	OMF, 6800 ohm, 2W
⚠R417	24383682	OMF, 6800 ohm, 2W
R421	24366514	CF, 510k ohm
R422	24366100	CF, 10 ohm
R423	24366102	CF, 1k ohm
R424	24366101	CF, 100 ohm
R425	24366473	CF, 47k ohm
R426	24366103	CF, 10k ohm
R427	24366472	CF, 4700 ohm
R429	24366472	CF, 4700 ohm
R431	24327913	MF, 91k ohm, ±1%, 1/4W
R432	24366102	CF, 1k ohm
R433	24366102	CF, 1k ohm
R434	24367183	CF, 18k ohm, ±2%
⚠R435	24382101	OMF, 100 ohm, 1W
R436	24366102	CF, 1k ohm
⚠R437	24382183	OMF, 18k ohm, 1W
R438	24367243	CF, 24k ohm, ±2%
R439	24066878	VR, 2k ohm, 0.3W
R440	24367512	CF, 5100 ohm, ±2%
⚠R441	24382331	OMF, 330 ohm, 1W
⚠R443	24338109	OMF, 1.0 ohm, 1W
⚠R444	24338109	OMF, 1.0 ohm, 1W
⚠R447	24382223	OMF, 22k ohm, 1W
⚠R448	24338109	OMF, 1.0 ohm, 1W
⚠R450	24338109	OMF, 1.0 ohm, 1W
⚠R451	24383103	OMF, 10k ohm, 2W
⚠R452	24383103	OMF, 10k ohm, 2W
R453	24366103	CF, 10k ohm
R454	24366332	CF, 3300 ohm
R455	24366820	CF, 82 ohm
⚠R456	24382242	OMF, 2400 ohm, 1W
R457	24000946	Varistor, TNR9G560K
R458	24366333	CF, 33k ohm
R459	24366102	CF, 1k ohm
R460	24381203	OMF, 20k ohm, 1/2W
⚠R461	24367753	CF, 75k ohm, ±2%
R462	24366472	CF, 4700 ohm
R463	24366302	CF, 3k ohm
⚠R466	24338109	OMF, 1.0 ohm, 1W
R468	24360102	CF, 1k ohm, 1/8W
⚠R469	24000906	FR, 2.4 ohm, 2W
R470	24366113	CF, 11k ohm
R471	24366754	CF, 750k ohm
R472	24366103	CF, 10k ohm
R473	24366103	CF, 10k ohm
R474	24366752	CF, 7500 ohm
R475	24066876	VR, 10k ohm, 0.3W
R476	24366103	CF, 10k ohm
R477	24366103	CF, 10k ohm
R478	24366272	CF, 2700 ohm
R479	24366102	CF, 1k ohm
R480	24366472	CF, 4700 ohm

Location No.	Part No.	Description
R481	24367683	CF, 68k ohm, ±2%
R482	24066877	VR, 5k ohm, 0.3W
⚠R483	24382103	OMF, 10k ohm, 1W
R484	24942185	CC, 1.8M ohm, 1/2W
⚠R485	24552270	OMF, 27 ohm, 1/2W
R486	24366223	CF, 22k ohm
⚠R487	24327103	MF, 10k ohm, ±1%, 1/4W
⚠R488	24327562	MF, 5600 ohm, ±1%, 1/4W
R489	24367103	CF, 10k ohm, ±2%
R490	24366823	CF, 82k ohm
⚠R492	24367333	CF, 33k ohm, ±2%
⚠R493	24367103	CF, 10k ohm, ±2%
R494	24381103	OMF, 10k ohm, 1/2W
⚠R495	24366821	CF, 820 ohm
R496	24367823	CF, 82k ohm, ±2%
R497	24367823	CF, 82k ohm, ±2%
R498	24367913	CF, 91k ohm, ±2%
R499	24366682	CF, 6800 ohm
R502	24366102	CF, 1k ohm
R509	24366152	CF, 1500 ohm
R510	24366103	CF, 10k ohm
R514	24366475	CF, 4.7M ohm
R515	24366103	CF, 10k ohm
R516	24366223	CF, 22k ohm
R517	24366333	CF, 33k ohm
R518	24366471	CF, 470 ohm
R520	24366682	CF, 6800 ohm
R601	24366392	CF, 3900 ohm
R602	24366392	CF, 3900 ohm
R603	24366301	CF, 300 ohm
R604	24366301	CF, 300 ohm
R605	24366102	CF, 1k ohm
R606	24366102	CF, 1k ohm
⚠R607	24366229	CF, 2.2 ohm
⚠R608	24366229	CF, 2.2 ohm
R611	24366473	CF, 47k ohm
R701	24366101	CF, 100 ohm
R702	24366101	CF, 100 ohm
R703	24366101	CF, 100 ohm
R704	24366101	CF, 100 ohm
R705	24366101	CF, 100 ohm
R706	24366101	CF, 100 ohm
R707	24366472	CF, 4700 ohm
R708	24366472	CF, 4700 ohm
R709	24366561	CF, 560 ohm
⚠R710	24531101	FR, 100 ohm, 1/2W
⚠R711	24531101	FR, 100 ohm, 1/2W
R712	24555331	OMF, 330 ohm, 3W
⚠R713	24546279	FR, 2.7 ohm, 1/2W
R714	24366472	CF, 4700 ohm
R715	24366472	CF, 4700 ohm
R716	24366561	CF, 560 ohm
⚠R717	24531101	FR, 100 ohm, 1/2W
⚠R718	24531101	FR, 100 ohm, 1/2W
R719	24555331	OMF, 330 ohm, 3W
⚠R720	24546279	FR, 2.7 ohm, 1/2W
R721	24366472	CF, 4700 ohm
R722	24366472	CF, 4700 ohm
R723	24366561	CF, 560 ohm
R724	24555331	OMF, 330 ohm, 3W
⚠R725	24546279	FR, 2.7 ohm, 1/2W
R726	24366472	CF, 4700 ohm
R727	24366472	CF, 4700 ohm
R728	24366561	CF, 560 ohm

Location No.	Part No.	Description
⚠R729	24531101	FR, 100 ohm, 1/2W
⚠R730	24531101	FR, 100 ohm, 1/2W
⚠R731	24555331	OMF, 330 ohm, 3W
⚠R732	24546279	FR, 2.7 ohm, 1/2W
R733	24366472	CF, 4700 ohm
R734	24366472	CF, 4700 ohm
R735	24366561	CF, 560 ohm
⚠R736	24531101	FR, 100 ohm, 1/2W
⚠R737	24531101	FR, 100 ohm, 1/2W
R738	24555331	OMF, 330 ohm, 3W
⚠R739	24546279	FR, 2.7 ohm, 1/2W
R740	24366472	CF, 4700 ohm
R741	24366472	CF, 4700 ohm
R742	24366561	CF, 560 ohm
⚠R743	24555331	OMF, 330 ohm, 3W
⚠R744	24546279	FR, 2.7 ohm, 1/2W
R750	24366153	CF, 15k ohm
R751	24366222	CF, 2200 ohm
R752	24366471	CF, 470 ohm
⚠R753	24552680	OMF, 68 ohm, 1/2W
R754	24366222	CF, 2200 ohm
R755	24366102	CF, 1k ohm
R756	24366102	CF, 1k ohm
R757	24366471	CF, 470 ohm
R758	24366102	CF, 1k ohm
R759	24552471	OMF, 470 ohm, 1/2W
R760	24366471	CF, 470 ohm
R761	24366273	CF, 27k ohm
R762	24366203	CF, 20k ohm
R763	24366152	CF, 1500 ohm
R764	24366182	CF, 1800 ohm
R765	24366470	CF, 47 ohm
R766	24366333	CF, 33k ohm
R767	24552100	OMF, 10 ohm, 1/2W
R768	24366820	CF, 82 ohm
R769	24366820	CF, 82 ohm
R770	24366152	CF, 1500 ohm
R771	24366152	CF, 1500 ohm
R772	24366122	CF, 1200 ohm
R773	24366122	CF, 1200 ohm
R774	24366683	CF, 68k ohm
R775	24366683	CF, 68k ohm
R776	24366123	CF, 12k ohm
R777	24552430	OMF, 43 ohm, 1/2W
R778	24552430	OMF, 43 ohm, 1/2W
R779	24321279	OMF, 2.7 ohm, 1/2W
R780	24321279	OMF, 2.7 ohm, 1/2W
⚠R781	24554221	OMF, 220 ohm, 2W
R782	24552301	OMF, 300 ohm, 1/2W
R801	24552202	OMF, 2k ohm, 1/2W
⚠R802	24383563	OMF, 56k ohm, 2W
R803	24366103	CF, 10k ohm
⚠R804	24002994	CC, 3.9M ohm, 1/2W
⚠R805	24002994	CC, 3.9M ohm, 1/2W
R806	24366822	CF, 8200 ohm
R807	24366562	CF, 5600 ohm
R808	24366102	CF, 1k ohm
R809	24366471	CF, 470 ohm
⚠R810	24007514	Cement, 0.56 ohm, ±10%, 15W
R811	24366622	CF, 6200 ohm
⚠R812	24007514	Cement, 0.56 ohm, ±10%, 15W
R813	24366104	CF, 100k ohm
R814	24366203	CF, 20k ohm
R815	24366273	CF, 27k ohm

Location No.	Part No.	Description
R816	24552472	OMF, 4700 ohm, 1/2W
R817	24552472	OMF, 4700 ohm, 1/2W
R840	24552180	OMF, 18 ohm, 1/2W
R841	24366273	CF, 27k ohm
R842	24366153	CF, 15k ohm
R843(U801)	24552912	OMF, 9100 ohm, 1/2W
R843(U901)	24366102	CF, 1k ohm
R844	24552912	OMF, 9100 ohm, 1/2W
⚠R845	24383563	OMF, 56k ohm, 2W
⚠R846	24383331	OMF, 330 ohm, 2W
⚠R847	24004701	MF, 0.10 ohm, 2W
⚠R848	24004703	MF, 0.15 ohm, 2W
R849	24552471	OMF, 470 ohm, 1/2W
R850	24366103	CF, 10k ohm
R851	24366302	CF, 3k ohm
⚠R852	24553471	OMF, 470 ohm, 1W
R853	24366102	CF, 1k ohm
R854	24552471	OMF, 470 ohm, 1/2W
R855	24552511	OMF, 510 ohm, 1/2W
R856	24366392	CF, 3900 ohm
R857	24367123	CF, 12k ohm, ±2%
R858	24367183	CF, 18k ohm, ±2%
R859	24366432	CF, 4300 ohm
⚠R860	24004701	MF, 0.10 ohm, 2W
R861	24366511	CF, 510 ohm
R862	24552912	OMF, 9100 ohm, 1/2W
R863	24552912	OMF, 9100 ohm, 1/2W
R864	24552471	OMF, 470 ohm, 1/2W
R865	24366471	CF, 470 ohm
⚠R866	24004701	MF, 0.10 ohm, 2W
R867	24552471	OMF, 470 ohm, 1/2W
⚠R868	24383331	OMF, 330 ohm, 2W
R869	24366392	CF, 3900 ohm
R870	24327203	MF, 20k ohm, ±1%, 1/4W
R871	24327203	MF, 20k ohm, ±1%, 1/4W
R872	24381131	OMF, 130 ohm, 1/2W
R873	24381301	OMF, 300 ohm, 1/2W
R874	24366152	CF, 1500 ohm
R875	24366102	CF, 1k ohm
⚠R876	24323518	OMF, 0.51 ohm, 2W
R877	24366471	CF, 470 ohm
R878	24327133	MF, 13k ohm, ±1%, 1/4W
R879	24327123	MF, 12k ohm, ±1%, 1/4W
R880	24327912	MF, 9100 ohm, ±1%, 1/4W
R881	24366102	CF, 1k ohm
⚠R882	24553113	OMF, 11k ohm, 1W
⚠R883	24553113	OMF, 11k ohm, 1W
R884	24366242	CF, 2400 ohm
R885	24366103	CF, 10k ohm
R886	24366302	CF, 3k ohm
R887(U901)	24366102	CF, 1k ohm
R887(U801)	24366102	CF, 1k ohm
⚠R888(U801)	24382331	OMF, 330 ohm, 1W
R888(U901)	24366102	CF, 1k ohm
R889(U801)	24366202	CF, 2k ohm
R889(U901)	24366393	CF, 39k ohm
⚠R890(U801)	24382331	OMF, 330 ohm, 1W
R890(U901)	24366102	CF, 1k ohm
R891(U801)	24366202	CF, 2k ohm
R891(U901)	24366273	CF, 27k ohm
R892	24366102	CF, 1k ohm
⚠R899	24000205	Varistor, SNR271KD14
R902	24366101	CF, 100 ohm
R903	24366101	CF, 100 ohm
R904	24366101	CF, 100 ohm
⚠R905	24555223	OMF, 22k ohm, 3W
⚠R906	24555223	OMF, 22k ohm, 3W
⚠R907	24555223	OMF, 22k ohm, 3W
⚠R908	24555243	OMF, 24k ohm, 3W
⚠R909	24555243	OMF, 24k ohm, 3W
⚠R910	24555243	OMF, 24k ohm, 3W
R911	24366562	CF, 5600 ohm
R912	24366103	CF, 10k ohm
R913	24366101	CF, 100 ohm
⚠R917	24366101	CF, 100 ohm
R918	24366101	CF, 100 ohm
R922	24942102	CC, 1k ohm, 1/2W
R924	24942102	CC, 1k ohm, 1/2W
R932	24366102	CF, 1k ohm
R933	24366120	CF, 12 ohm
R934	24552132	OMF, 1300 ohm, 1/2W
R935	24552132	OMF, 1300 ohm, 1/2W
R936	24366620	CF, 62 ohm
R937	24366131	CF, 130 ohm
R945	24327820	MF, 82 ohm, ±1%, 1/4W
R946	24366221	CF, 220 ohm
R947	24366151	CF, 150 ohm
R948	24552132	OMF, 1300 ohm, 1/2W
R949	24942102	CC, 1k ohm, 1/2W
R950	24061800	VR, 200 ohm, 1/8W
R952	24061800	VR, 200 ohm, 1/8W
R957	24327270	MF, 27 ohm, ±1%, 1/4W
R958	24327131	MF, 130 ohm, ±1%, 1/4W
R959	24327131	MF, 130 ohm, ±1%, 1/4W
R960	24366820	CF, 82 ohm
R961	24366430	CF, 43 ohm
R962	24366470	CF, 47 ohm
R963	24366361	CF, 360 ohm
R964	24366821	CF, 820 ohm
R968	24366101	CF, 100 ohm
⚠R971	24555223	OMF, 22k ohm, 3W
⚠R972	24555223	OMF, 22k ohm, 3W
⚠R974	24555223	OMF, 22k ohm, 3W
R977	24366122	CF, 1200 ohm
R980	24366620	CF, 62 ohm
RA01	24366102	CF, 1k ohm
RA02	24366221	CF, 220 ohm
RA03	24366102	CF, 1k ohm
RA05	24366102	CF, 1k ohm
RA06	24366102	CF, 1k ohm
RA07	24366102	CF, 1k ohm
RA08	24366102	CF, 1k ohm
RA11	24366102	CF, 1k ohm
RA12	24366102	CF, 1k ohm
RA13	24366102	CF, 1k ohm
RA14	24366223	CF, 22k ohm
RA15	24366223	CF, 22k ohm
RA16	24366102	CF, 1k ohm
RA17	24366102	CF, 1k ohm
RA18	24366103	CF, 10k ohm
RA19	24366103	CF, 10k ohm
RA20	24366333	CF, 33k ohm
RA21	24366333	CF, 33k ohm
RA22	24366333	CF, 33k ohm
RA23	24366333	CF, 33k ohm
RA25	24366102	CF, 1k ohm
RA26	24366102	CF, 1k ohm
RA28	24366153	CF, 15k ohm

Location No.	Part No.	Description
RA29	24366102	CF, 1k ohm
RA30	24366102	CF, 1k ohm
RA31	24366682	CF, 6800 ohm
RA32	24366682	CF, 6800 ohm
RA33	24366473	CF, 47k ohm
RA34	24366102	CF, 1k ohm
RA35	24366101	CF, 100 ohm
RA36	24366101	CF, 100 ohm
RA37	24366101	CF, 100 ohm
RA38	24366101	CF, 100 ohm
RA39	24366102	CF, 1k ohm
RA40	24366102	CF, 1k ohm
RA41	24366103	CF, 10k ohm
RA43	24366103	CF, 10k ohm
RA44	24366332	CF, 3300 ohm
RA45	24366332	CF, 3300 ohm
RA46	24366332	CF, 3300 ohm
RA47	24366102	CF, 1k ohm
RA50	24366202	CF, 2k ohm
RA54	24366101	CF, 100 ohm
RA55	24366183	CF, 18k ohm
RA56	24366562	CF, 5600 ohm
RA57	24366101	CF, 100 ohm
RA58	24366183	CF, 18k ohm
RA64	24366333	CF, 33k ohm
RA66	24366104	CF, 100k ohm
RA79	24366101	CF, 100 ohm
RA80	24366101	CF, 100 ohm
RA83	24366103	CF, 10k ohm
RA84	24366363	CF, 36k ohm
RA85	24366473	CF, 47k ohm
RA86	24366272	CF, 2700 ohm
RA87	24366621	CF, 620 ohm
RA88	24366621	CF, 620 ohm
RA89	24366152	CF, 1500 ohm
RA90	24366273	CF, 27k ohm
RA91	24366621	CF, 620 ohm
RA92	24366621	CF, 620 ohm
RA93	24366153	CF, 15k ohm
RA97	24366103	CF, 10k ohm
RA101	24366102	CF, 1k ohm
RA102	24366102	CF, 1k ohm
RA103	24366102	CF, 1k ohm
RA104	24366362	CF, 3600 ohm
RA105	24366471	CF, 470 ohm
RA106	24366103	CF, 10k ohm
RA107	24366102	CF, 1k ohm
RA110	24366102	CF, 1k ohm
RA111	24366563	CF, 56k ohm
RA113	24366153	CF, 15k ohm
RA115	24366272	CF, 2700 ohm
RA116	24366272	CF, 2700 ohm
RA117	24366272	CF, 2700 ohm
RA118	24366272	CF, 2700 ohm
RA119	24366102	CF, 1k ohm
RA120	24366102	CF, 1k ohm
RA121	24366472	CF, 4700 ohm
RA122	24366103	CF, 10k ohm
RA123	24366103	CF, 10k ohm
RA124	24366183	CF, 18k ohm
RA127	24366103	CF, 10k ohm
RA160	24366752	CF, 7500 ohm
RA161	24366752	CF, 7500 ohm
RA162	24366113	CF, 11k ohm

Location No.	Part No.	Description
RA163	24366163	CF, 16k ohm
RA164	24366303	CF, 30k ohm
RA166	24366752	CF, 7500 ohm
RB25	24366222	CF, 2200 ohm
RB57	24366301	CF, 300 ohm
RB58	24366244	CF, 240k ohm
RB59	24366133	CF, 13k ohm
RB60	24366392	CF, 3900 ohm
RB61	24366103	CF, 10k ohm
RB64	24366103	CF, 10k ohm
RB66	24366223	CF, 22k ohm
RB75	24366102	CF, 1k ohm
RB76	24366102	CF, 1k ohm
RB77	24366102	CF, 1k ohm
RB78	24366102	CF, 1k ohm
RB79	24366105	CF, 1M ohm
RB80	24366103	CF, 10k ohm
RB81	24366103	CF, 10k ohm
RB82	24366562	CF, 5600 ohm
RB83	24366132	CF, 1300 ohm
RB84	24366332	CF, 3300 ohm
RB85	24366563	CF, 56k ohm
RB86	24366223	CF, 22k ohm
RB87	24366102	CF, 1k ohm
RB88	24366331	CF, 330 ohm
RB90	24366104	CF, 100k ohm
RB91	24366102	CF, 1k ohm
RB92	24366222	CF, 2200 ohm
RB93	24366511	CF, 510 ohm
RB94	24366511	CF, 510 ohm
RB95	24366511	CF, 510 ohm
RB96	24366511	CF, 510 ohm
RB97	24366102	CF, 1k ohm
RB98	24366332	CF, 3300 ohm
RB99	24366332	CF, 3300 ohm
RB100	24366223	CF, 22k ohm
RB101	24366472	CF, 4700 ohm
RE03	24366102	CF, 1k ohm
⚠RF03	24510569	Cement, 5.6 ohm, 5W
⚠RF29	24383123	OMF, 12k ohm, 2W
RG01	24366221	CF, 220 ohm
RG02	24366101	CF, 100 ohm
⚠RG03	24366470	CF, 47 ohm
RG04	24366102	CF, 1k ohm
RJ02	24366562	CF, 5600 ohm
RJ03	24366562	CF, 5600 ohm
RJ04	24366912	CF, 9100 ohm
RJ06	24366152	CF, 1500 ohm
RJ07	24366152	CF, 1500 ohm
RJ08	24366132	CF, 1300 ohm
RJ09	24366682	CF, 6800 ohm
RJ10	24366102	CF, 1k ohm
RJ13	24366622	CF, 6200 ohm
RJ14	24366104	CF, 100k ohm
RJ15	24066873	VR, 100k ohm, 0.3W
RJ16	24366153	CF, 15k ohm
RJ17	24066876	VR, 10k ohm, 0.3W
RJ18	24366103	CF, 10k ohm
RJ19	24366103	CF, 10k ohm
RJ20	24366223	CF, 22k ohm
RJ21	24366223	CF, 22k ohm
RJ22	24366103	CF, 10k ohm
RJ23	24366103	CF, 10k ohm
RJ24	24366473	CF, 47k ohm

Location No.	Part No.	Description
RJ25	24366473	CF, 47k ohm
RJ26	24066876	VR, 10k ohm, 0.3W
RJ27	24366101	CF, 100 ohm
RJ28	24366104	CF, 100k ohm
RJ29	24366104	CF, 100k ohm
RJ30	24366223	CF, 22k ohm
RJ31	24366223	CF, 22k ohm
RJ32	24366101	CF, 100 ohm
RJ33	24366473	CF, 47k ohm
RJ34	24366473	CF, 47k ohm
RJ35	24366103	CF, 10k ohm
RJ36	24367473	CF, 47k ohm, ±2%
RJ37	24367243	CF, 24k ohm, ±2%
RJ38	24367473	CF, 47k ohm, ±2%
RJ39	24367473	CF, 47k ohm, ±2%
RJ40	24367473	CF, 47k ohm, ±2%
RJ41	24366101	CF, 100 ohm
RJ42	24366123	CF, 12k ohm
RJ44	24366334	CF, 330k ohm
RJ52	24366333	CF, 33k ohm
RJ54	24366333	CF, 33k ohm
RJ56	24366333	CF, 33k ohm
RJ58	24366333	CF, 33k ohm
RJ59	24366472	CF, 4700 ohm
RJ60	24366472	CF, 4700 ohm
RJ61	24366472	CF, 4700 ohm
RJ62	24366101	CF, 100 ohm
RJ63	24366472	CF, 4700 ohm
RJ64	24366472	CF, 4700 ohm
RJ65	24366472	CF, 4700 ohm
RJ66	24366101	CF, 100 ohm
RJ67	24366472	CF, 4700 ohm
RJ68	24366472	CF, 4700 ohm
RJ69	24366472	CF, 4700 ohm
RJ70	24366101	CF, 100 ohm
RJ71	24366472	CF, 4700 ohm
RJ72	24366472	CF, 4700 ohm
RJ73	24366472	CF, 4700 ohm
RJ74	24366101	CF, 100 ohm
RJ75	24366472	CF, 4700 ohm
RJ76	24366472	CF, 4700 ohm
RJ77	24366472	CF, 4700 ohm
RJ78	24366101	CF, 100 ohm
RJ79	24366472	CF, 4700 ohm
RJ80	24366472	CF, 4700 ohm
RJ81	24366472	CF, 4700 ohm
RJ82	24366101	CF, 100 ohm
RJ83	24366562	CF, 5600 ohm
RJ84	24366101	CF, 100 ohm
RJ85	24366101	CF, 100 ohm
RJ86	24366101	CF, 100 ohm
RJ87	24366101	CF, 100 ohm
RJ88	24366101	CF, 100 ohm
RJ89	24366101	CF, 100 ohm
RJ90	24366393	CF, 39k ohm
RJ91	24366103	CF, 10k ohm
RJ92	24366183	CF, 18k ohm
RJ94	24366103	CF, 10k ohm
RJ95	24366123	CF, 12k ohm
RJ97	24366393	CF, 39k ohm
RJ98	24366753	CF, 75k ohm
RJ99	24366303	CF, 30k ohm
RJ100	24366303	CF, 30k ohm
RJ101	24366164	CF, 160k ohm

Location No.	Part No.	Description
RJ102	24366102	CF, 1k ohm
RJ103	24366103	CF, 10k ohm
RJ104	24366103	CF, 10k ohm
RJ105	24366333	CF, 33k ohm
RJ106	24366333	CF, 33k ohm
RJ107	24366333	CF, 33k ohm
RK01	24066926	VR, 10k ohm, 1/10W
RK02	24066926	VR, 10k ohm, 1/10W
RK03	24066926	VR, 10k ohm, 1/10W
RK04	24066926	VR, 10k ohm, 1/10W
RK05	24066926	VR, 10k ohm, 1/10W
RK06	24066926	VR, 10k ohm, 1/10W
RK07	24066926	VR, 10k ohm, 1/10W
RK08	24066926	VR, 10k ohm, 1/10W
RK09	24066926	VR, 10k ohm, 1/10W
RK10	24066926	VR, 10k ohm, 1/10W
RK11	24066926	VR, 10k ohm, 1/10W
RK12	24066926	VR, 10k ohm, 1/10W
RK13	24066926	VR, 10k ohm, 1/10W
RK14	24066926	VR, 10k ohm, 1/10W
RK15	24066926	VR, 10k ohm, 1/10W
RK16	24066926	VR, 10k ohm, 1/10W
RK17	24066926	VR, 10k ohm, 1/10W
RK18	24066926	VR, 10k ohm, 1/10W
RK19	24066926	VR, 10k ohm, 1/10W
RK20	24066926	VR, 10k ohm, 1/10W
RK21	24066926	VR, 10k ohm, 1/10W
RK22	24066926	VR, 10k ohm, 1/10W
RK23	24066926	VR, 10k ohm, 1/10W
RK24	24066926	VR, 10k ohm, 1/10W
RK25	24066926	VR, 10k ohm, 1/10W
RK26	24066926	VR, 10k ohm, 1/10W
RK27	24066926	VR, 10k ohm, 1/10W
RK34	24066926	VR, 10k ohm, 1/10W
RK35	24066926	VR, 10k ohm, 1/10W
RK37	24066926	VR, 10k ohm, 1/10W
RK38	24066926	VR, 10k ohm, 1/10W
RK39	24066926	VR, 10k ohm, 1/10W
RK40	24066926	VR, 10k ohm, 1/10W
RK41	24066926	VR, 10k ohm, 1/10W
RK42	24066926	VR, 10k ohm, 1/10W
RK43	24066926	VR, 10k ohm, 1/10W
RK44	24066926	VR, 10k ohm, 1/10W
RK45	24066926	VR, 10k ohm, 1/10W
RK46	24066926	VR, 10k ohm, 1/10W
RK47	24066926	VR, 10k ohm, 1/10W
RK48	24066926	VR, 10k ohm, 1/10W
RK49	24066926	VR, 10k ohm, 1/10W
RK50	24066926	VR, 10k ohm, 1/10W
RK51	24066926	VR, 10k ohm, 1/10W
RK52	24066926	VR, 10k ohm, 1/10W
RK53	24066926	VR, 10k ohm, 1/10W
RK55	24066926	VR, 10k ohm, 1/10W
RK56	24066926	VR, 10k ohm, 1/10W
RK58	24066926	VR, 10k ohm, 1/10W
RK59	24066926	VR, 10k ohm, 1/10W
RK60	24066926	VR, 10k ohm, 1/10W
RK61	24066926	VR, 10k ohm, 1/10W
RK63	24066926	VR, 10k ohm, 1/10W
RK64	24066926	VR, 10k ohm, 1/10W
RK72	24066926	VR, 10k ohm, 1/10W
RK73	24066926	VR, 10k ohm, 1/10W
RK75	24066926	VR, 10k ohm, 1/10W
RK76	24066926	VR, 10k ohm, 1/10W

Location No.	Part No.	Description
RK78	24066926	VR, 10k ohm, 1/10W
RK79	24066926	VR, 10k ohm, 1/10W
RK80	24066926	VR, 10k ohm, 1/10W
RK81	24066926	VR, 10k ohm, 1/10W
RK82	24066926	VR, 10k ohm, 1/10W
RK83	24066926	VR, 10k ohm, 1/10W
RK84	24066926	VR, 10k ohm, 1/10W
RK85	24066926	VR, 10k ohm, 1/10W
RK101	24063735	VR, 10k ohm, 0.08W
RK102	24063735	VR, 10k ohm, 0.08W
RK103	24063735	VR, 10k ohm, 0.08W
RK104	24063735	VR, 10k ohm, 0.08W
RM01(U021Z)	24366472	CF, 4700 ohm
RM01(UM01)	24366182	CF, 1800 ohm
RM02(U021Z)	24366472	CF, 4700 ohm
RM02(UM01)	24366102	CF, 1k ohm
RM03(U021Z)	24366103	CF, 10k ohm
RM03(UM01)	24366102	CF, 1k ohm
RM04(U021Z)	24366472	CF, 4700 ohm
RM04(UM01)	24366153	CF, 15k ohm
RM05(U021Z)	24366472	CF, 4700 ohm
RM05(UM01)	24366153	CF, 15k ohm
RM06(UM01)	24366202	CF, 2k ohm
RM06(U021Z)	24366103	CF, 10k ohm
RM07	24366472	CF, 4700 ohm
RM08	24366472	CF, 4700 ohm
RM09(UM01)	24366102	CF, 1k ohm
RM09(U021Z)	24366472	CF, 4700 ohm
RM10	24366472	CF, 4700 ohm
RM11	24366472	CF, 4700 ohm
RM12	24366822	CF, 8200 ohm
RM13	24366472	CF, 4700 ohm
RM14	24366332	CF, 3300 ohm
RM15	24366472	CF, 4700 ohm
RM16	24366472	CF, 4700 ohm
RM17(UM01)	24366431	CF, 430 ohm
RM17(U021Z)	24366472	CF, 4700 ohm
RM18(U021Z)	24366472	CF, 4700 ohm
RM18(UM01)	24366431	CF, 430 ohm
RM19(UM01)	24366431	CF, 430 ohm
RM19(U021Z)	24366472	CF, 4700 ohm
RM20(U021Z)	24366752	CF, 7500 ohm
RM20(UM01)	24366431	CF, 430 ohm
RM21	24366472	CF, 4700 ohm
RM22(U021Z)	24366472	CF, 4700 ohm
RM22(UM01)	24366222	CF, 2200 ohm
RM23(UM01)	24366222	CF, 2200 ohm
RM23(U021Z)	24366752	CF, 7500 ohm
RM24(U021Z)	24366472	CF, 4700 ohm
RM24(UM01)	24366222	CF, 2200 ohm
RM25(U021Z)	24366103	CF, 10k ohm
RM25(UM01)	24366222	CF, 2200 ohm
RM26(U021Z)	24366103	CF, 10k ohm
RM26(UM01)	24366431	CF, 430 ohm
RM27(U021Z)	24366103	CF, 10k ohm
RM27(UM01)	24366431	CF, 430 ohm
RM28	24366103	CF, 10k ohm
RM29	24366472	CF, 4700 ohm
RM30	24366472	CF, 4700 ohm
RM31	24366103	CF, 10k ohm
RM32	24366472	CF, 4700 ohm
RM33	24366223	CF, 22k ohm
RM34	24366223	CF, 22k ohm
RM35	24366272	CF, 2700 ohm

Location No.	Part No.	Description
RM36	24366562	CF, 5600 ohm
RM37(UM01)	24366102	CF, 1k ohm
RM37(U021Z)	24366822	CF, 8200 ohm
RM38(U021Z)	24366682	CF, 6800 ohm
RM38(UM01)	24366102	CF, 1k ohm
RM39	24366472	CF, 4700 ohm
RM40	24366472	CF, 4700 ohm
RM42	24366472	CF, 4700 ohm
RM43	24366472	CF, 4700 ohm
RM44	24366472	CF, 4700 ohm
RM45	24366472	CF, 4700 ohm
RM46	24366103	CF, 10k ohm
RM47	24366562	CF, 5600 ohm
RM48	24366472	CF, 4700 ohm
RM49	24366472	CF, 4700 ohm
RM50	24366472	CF, 4700 ohm
RM51	24366562	CF, 5600 ohm
RM52	24366103	CF, 10k ohm
RM53	24366103	CF, 10k ohm
RM54	24366362	CF, 3600 ohm
RM55	24366472	CF, 4700 ohm
RM56	24366362	CF, 3600 ohm
RM57	24366472	CF, 4700 ohm
RM58	24366362	CF, 3600 ohm
RM59	24366472	CF, 4700 ohm
RM60	24366472	CF, 4700 ohm
RM61	24366472	CF, 4700 ohm
RM62(UM01)	24366512	CF, 5100 ohm
RM62(U021Z)	24366472	CF, 4700 ohm
RM63(UM01)	24366512	CF, 5100 ohm
RM63(U021Z)	24366472	CF, 4700 ohm
RM64(UM01)	24366512	CF, 5100 ohm
RM64(U021Z)	24366472	CF, 4700 ohm
RM65	24366472	CF, 4700 ohm
RM66	24366472	CF, 4700 ohm
RM67	24366472	CF, 4700 ohm
RM68	24366472	CF, 4700 ohm
RM69	24366472	CF, 4700 ohm
RM70	24366472	CF, 4700 ohm
RM71	24366472	CF, 4700 ohm
RM72	24366822	CF, 8200 ohm
RM73(U021Z)	24366103	CF, 10k ohm
RM73(UM01)	24366272	CF, 2700 ohm
RM74(UM01)	24366361	CF, 360 ohm
RM74(U021Z)	24366103	CF, 10k ohm
RM75(U021Z)	24366123	CF, 12k ohm
RM75(UM01)	24380103	CF, 10k ohm, 1/8W
RM76	24366123	CF, 12k ohm
RM77	24366223	CF, 22k ohm
RM78	24366223	CF, 22k ohm
RM79	24366273	CF, 27k ohm
RM80	24366822	CF, 8200 ohm
RM81	24366822	CF, 8200 ohm
RM82	24366103	CF, 10k ohm
RM83	24366472	CF, 4700 ohm
RM84	24366822	CF, 8200 ohm
RM85	24366103	CF, 10k ohm
RM86	24366103	CF, 10k ohm
RM87	24366123	CF, 12k ohm
RM88	24366472	CF, 4700 ohm
RM89	24366472	CF, 4700 ohm
RM90	24366472	CF, 4700 ohm
RM91	24366472	CF, 4700 ohm
RM93	24366472	CF, 4700 ohm

Location No.	Part No.	Description
RM94	24366472	CF, 4700 ohm
RM95	24366123	CF, 12k ohm
RM96	24366752	CF, 7500 ohm
RM151	24366472	CF, 4700 ohm
RM152	24366472	CF, 4700 ohm
RM153	24366472	CF, 4700 ohm
RM154	24366472	CF, 4700 ohm
RM155	24366472	CF, 4700 ohm
RM156	24366472	CF, 4700 ohm
RM157	24366472	CF, 4700 ohm
RM158	24366472	CF, 4700 ohm
RN13	24366103	CF, 10k ohm
RN14	24366823	CF, 82k ohm
RN15	24366103	CF, 10k ohm
RN16	24366823	CF, 82k ohm
RN18	24366272	CF, 2700 ohm
RN41	24366102	CF, 1k ohm
RN42	24366102	CF, 1k ohm
RN70	24366102	CF, 1k ohm
RN71	24366102	CF, 1k ohm
RN82	24366394	CF, 390k ohm
RN86	24366472	CF, 4700 ohm
RN90	24366102	CF, 1k ohm
RN91	24366183	CF, 18k ohm
RN92	24366103	CF, 10k ohm
RN93	24366183	CF, 18k ohm
RN94	24366103	CF, 10k ohm
RN95	24366102	CF, 1k ohm
RN96	24366511	CF, 510 ohm
RN97	24366242	CF, 2400 ohm
RN98	24366101	CF, 100 ohm
RS01	24366104	CF, 100k ohm
RS03	24366104	CF, 100k ohm
RS04	24366103	CF, 10k ohm
RS05	24366102	CF, 1k ohm
RS06	24366103	CF, 10k ohm
RS07	24366103	CF, 10k ohm
RS08	24366103	CF, 10k ohm
RS09	24366102	CF, 1k ohm
RS10	24366103	CF, 10k ohm
RS12	24366103	CF, 10k ohm
RS14	24366103	CF, 10k ohm
RS26	24366101	CF, 100 ohm
RS27	24366101	CF, 100 ohm
RS42	24366222	CF, 2200 ohm
RS43	24366222	CF, 2200 ohm
RS44	24366472	CF, 4700 ohm
RS45	24366472	CF, 4700 ohm
RS50	24366103	CF, 10k ohm
RS51	24366103	CF, 10k ohm
RS52	24366821	CF, 820 ohm
⚠RS53	24545150	FR, 15 ohm, 1/4W
RV02	24366472	CF, 4700 ohm
RV03	24366102	CF, 1k ohm
RV04	24366102	CF, 1k ohm
RV05	24366471	CF, 470 ohm
RV06	24366471	CF, 470 ohm
RV07	24366103	CF, 10k ohm
RV08	24366821	CF, 820 ohm
⚠RV09	24000665	FR, 15 ohm, 1/4W
RV10	24366272	CF, 2700 ohm
RV11	24366471	CF, 470 ohm
RV12	24366301	CF, 300 ohm
RV14	24366911	CF, 910 ohm

Location No.	Part No.	Description
RV15	24366561	CF, 560 ohm
RV16	24366471	CF, 470 ohm
RV17	24366561	CF, 560 ohm
RV18	24366471	CF, 470 ohm
RV19	24366103	CF, 10k ohm
RV20	24366562	CF, 5600 ohm
RV26	24366221	CF, 220 ohm
RV30	24366332	CF, 3300 ohm
RV38	24366104	CF, 100k ohm
RV39	24366104	CF, 100k ohm
RV41	24366561	CF, 560 ohm
RV43	24366101	CF, 100 ohm
RV44	24366561	CF, 560 ohm
RV81	24366750	CF, 75 ohm
RV82	24366750	CF, 75 ohm
RV83	24366302	CF, 3k ohm
RV84	24366750	CF, 75 ohm
RV85	24366750	CF, 75 ohm
RV88	24366750	CF, 75 ohm
RV89	24366750	CF, 75 ohm
RV90	24366750	CF, 75 ohm
RV103	24366101	CF, 100 ohm
RV110	24366750	CF, 75 ohm
RV111	24366302	CF, 3k ohm
RV112	24366223	CF, 22k ohm
RV117	24366471	CF, 470 ohm
RY01	24872152	Chip, 1500 ohm, 1/16W
RY02	24872102	Chip, 1k ohm, 1/16W
RY03	24871122	Chip, 1200 ohm, 1/8W
RY04	24872162	Chip, 1600 ohm, 1/16W
RY05	24872162	Chip, 1600 ohm, 1/16W
RY06	24872273	Chip, 27k ohm, 1/16W
RY07	24872104	Chip, 100k ohm, 1/16W
RY08	24872103	Chip, 10k ohm, 1/16W
RY09	24872103	Chip, 10k ohm, 1/16W
RY10	24872562	Chip, 5600 ohm, 1/16W
RY11	24872272	Chip, 2700 ohm, 1/16W
RY12	24872202	Chip, 2k ohm, 1/16W
RY13	24872103	Chip, 10k ohm, 1/16W
RY14	24872223	Chip, 22k ohm, 1/16W
RY15	24872223	Chip, 22k ohm, 1/16W
RY18	24872183	Chip, 18k ohm, 1/16W
RY19	24872394	Chip, 390k ohm, 1/16W
RY20	24872103	Chip, 10k ohm, 1/16W
RY23	24872102	Chip, 1k ohm, 1/16W
RY24	24872182	Chip, 1800 ohm, 1/16W
RY25	24872431	Chip, 430 ohm, 1/16W
RY26	24872105	Chip, 1M ohm, 1/16W
RY27	24872332	Chip, 3300 ohm, 1/16W
RY28	24872361	Chip, 360 ohm, 1/16W
RY29	24872431	Chip, 430 ohm, 1/16W
RY30	24872334	Chip, 330k ohm, 1/16W
RY31	24872102	Chip, 1k ohm, 1/16W
RY33	24872102	Chip, 1k ohm, 1/16W
RY34	24872821	Chip, 820 ohm, 1/16W
RY35	24872103	Chip, 10k ohm, 1/16W
RY36	24872824	Chip, 820k ohm, 1/16W
RY37	24872684	Chip, 680k ohm, 1/16W
RY38	24872103	Chip, 10k ohm, 1/16W
RY40	24872103	Chip, 10k ohm, 1/16W
RY41	24872153	Chip, 15k ohm, 1/16W
RY42	24872272	Chip, 2700 ohm, 1/16W
RY43	24872332	Chip, 3300 ohm, 1/16W
RY44	24872102	Chip, 1k ohm, 1/16W

Location No.	Part No.	Description
RY45	24872102	Chip, 1k ohm, 1/16W
RY46	24872102	Chip, 1k ohm, 1/16W
RY47	24872562	Chip, 5600 ohm, 1/16W
RY48	24872113	Chip, 11k ohm, 1/16W
RY50	24066875	VR, 20k ohm, 0.3W
RY52	24066598	VR, 2k ohm, 1/10W
RY53	24066598	VR, 2k ohm, 1/10W
RY60	24872512	Chip, 5100 ohm, 1/16W
RY61	24872512	Chip, 5100 ohm, 1/16W
RY62	24872202	Chip, 2k ohm, 1/16W
RY63	24872102	Chip, 1k ohm, 1/16W
RY64	24872102	Chip, 1k ohm, 1/16W
RY65	24871301	Chip, 300 ohm, 1/8W
RY67	24872202	Chip, 2k ohm, 1/16W
RY68	24872202	Chip, 2k ohm, 1/16W
RY69	24872202	Chip, 2k ohm, 1/16W
RY70	24872752	Chip, 7500 ohm, 1/16W
RY71	24872202	Chip, 2k ohm, 1/16W
RY72	24872102	Chip, 1k ohm, 1/16W
RY73	24872273	Chip, 27k ohm, 1/16W
RY74	24872302	Chip, 3k ohm, 1/16W
RY75	24872622	Chip, 6200 ohm, 1/16W
RY76	24872622	Chip, 6200 ohm, 1/16W
RY77	24872102	Chip, 1k ohm, 1/16W
RY78	24872154	Chip, 150k ohm, 1/16W
RY79	24872223	Chip, 22k ohm, 1/16W
RY80	24872302	Chip, 3k ohm, 1/16W
RY81	24872302	Chip, 3k ohm, 1/16W
RY82	24872154	Chip, 150k ohm, 1/16W
RY85	24871122	Chip, 1200 ohm, 1/8W
RY86	24871751	Chip, 750 ohm, 1/8W
RY87	24871751	Chip, 750 ohm, 1/8W
RY88	24872332	Chip, 3300 ohm, 1/16W
RY89	24872822	Chip, 8200 ohm, 1/16W
RY90	24872202	Chip, 2k ohm, 1/16W
RY91	24872102	Chip, 1k ohm, 1/16W
RY92	24872102	Chip, 1k ohm, 1/16W
RY93	24872202	Chip, 2k ohm, 1/16W
RY94	24872202	Chip, 2k ohm, 1/16W
RY95	24872102	Chip, 1k ohm, 1/16W
RY96	24872102	Chip, 1k ohm, 1/16W
RY97	24872102	Chip, 1k ohm, 1/16W
RY98	24871102	Chip, 1k ohm, 1/8W
RY99	24871102	Chip, 1k ohm, 1/8W
RY100	24871102	Chip, 1k ohm, 1/8W
RY103	24872103	Chip, 10k ohm, 1/16W
RY104	24872103	Chip, 10k ohm, 1/16W
RY105	24872103	Chip, 10k ohm, 1/16W
RY106	24872202	Chip, 2k ohm, 1/16W
RY107	24872202	Chip, 2k ohm, 1/16W
RY109	24872103	Chip, 10k ohm, 1/16W
RY110	24872753	Chip, 75k ohm, 1/16W
RY111	24872912	Chip, 9100 ohm, 1/16W
RY119	24000824	Chip Jumper, 2125 type
RY120	24872682	Chip, 6800 ohm, 1/16W
RY121	24872332	Chip, 3300 ohm, 1/16W
RY122	24872682	Chip, 6800 ohm, 1/16W
RY123	24872332	Chip, 3300 ohm, 1/16W
RY124	24872103	Chip, 10k ohm, 1/16W
RY125	24872102	Chip, 1k ohm, 1/16W
RY127	24872103	Chip, 10k ohm, 1/16W
RY133	24872202	Chip, 2k ohm, 1/16W
RY134	24872113	Chip, 11k ohm, 1/16W
RY135	24872153	Chip, 15k ohm, 1/16W

Location No.	Part No.	Description
RY136	24872103	Chip, 10k ohm, 1/16W
RY137	24872302	Chip, 3k ohm, 1/16W
RY138	24872103	Chip, 10k ohm, 1/16W
RY139	24872162	Chip, 1600 ohm, 1/16W
RY140	24872752	Chip, 7500 ohm, 1/16W
RY147	24872103	Chip, 10k ohm, 1/16W
RY148	24872202	Chip, 2k ohm, 1/16W
RY149	24872103	Chip, 10k ohm, 1/16W
RY150	24872223	Chip, 22k ohm, 1/16W
RY161	24872431	Chip, 430 ohm, 1/16W
RY162	24872431	Chip, 430 ohm, 1/16W
RY163	24872821	Chip, 820 ohm, 1/16W
RY165	24872103	Chip, 10k ohm, 1/16W
RZ01	24366103	CF, 10k ohm
RZ02	24366102	CF, 1k ohm
RZ03	24366202	CF, 2k ohm
RZ04	24366152	CF, 1500 ohm
RZ05	24366222	CF, 2200 ohm
RZ06	24366102	CF, 1k ohm
RZ07	24366272	CF, 2700 ohm
RZ09	24552121	OMF, 120 ohm, 1/2W
RZ10	24366222	CF, 2200 ohm
RZ11	24366102	CF, 1k ohm
RZ13	24366102	CF, 1k ohm
RZ14	24366751	CF, 750 ohm
RZ15	24366681	CF, 680 ohm
RZ16	24366751	CF, 750 ohm
RZ18	24366102	CF, 1k ohm
RZ19	24366681	CF, 680 ohm
RZ21	24366202	CF, 2k ohm
RZ22	24366222	CF, 2200 ohm
RZ23	24366103	CF, 10k ohm
RZ30	24366511	CF, 510 ohm
RZ36	24366821	CF, 820 ohm
RZ37	24366511	CF, 510 ohm
RZ38	24366472	CF, 4700 ohm
RZ40	24366751	CF, 750 ohm
RZ41	24366152	CF, 1500 ohm
RZ42	24366132	CF, 1300 ohm
RZ43	24366751	CF, 750 ohm
RZ46	24366821	CF, 820 ohm
RZ50	24066928	VR, 2k ohm, 1/10W
RZ51	24066879	VR, 1k ohm, 0.3W
RZ52	24066878	VR, 2k ohm, 0.3W
RZ53	24066928	VR, 2k ohm, 1/10W
RZ54	24066878	VR, 2k ohm, 0.3W
RZ64	24366331	CF, 330 ohm
RZ65	24366332	CF, 3300 ohm
RZ89	24366331	CF, 330 ohm

COILS & TRANSFORMERS

Location No.	Part No.	Description
L060	23238702	Coil, Peaking, TRF4101AJ
L220	23238718	Coil, Peaking, TRF4479AJ
L221	23238562	Coil, Peaking, TRF4109AJ
L260	23238718	Coil, Peaking, TRF4479AJ
L400	23238714	Coil, Peaking, TRF4100AJ
L402	23238714	Coil, Peaking, TRF4100AJ
L403	23238714	Coil, Peaking, TRF4100AJ
L410	23103859	Coil (Ferrite Bead), TEM2011
L411	23103859	Coil (Ferrite Bead), TEM2011
L422	23103859	Coil (Ferrite Bead), TEM2011
L423	23221961	Coil, Choke, TLN3017
L425	23221050	Coil, RF Choke, TLN1015
L441	23233045	Coil, Linearity, TLN2083G

Location No.	Part No.	Description
L442	23222691	Coil, Width, TLN2031
L444	23221746	Coil, Choke, TLN3155D
L446	23221746	Coil, Choke, TLN3155D
L448	23221746	Coil, Choke, TLN3155D
⚠L462	23231040	Deflection Yoke, TDY7076S
⚠L463	23231041	Deflection Yoke, TDY7076S
⚠L464	23231042	Deflection Yoke, TDY7076S
L470	23233064	Coil, Width, TLN2110
L472	23102413	Coil, Focus, MAG-1073
L473	23102413	Coil, Focus, MAG-1073
L501	23238710	Coil, Peaking, TRF4220AJ
L701	23237980	Coil, Peaking, TRF4390AC
L702	23103859	Coil (Ferrite Bead), TEM2011
L703	23103859	Coil (Ferrite Bead), TEM2011
L704	23261974	Coil, Choke, HC5-035
L705	23103859	Coil (Ferrite Bead), TEM2011
L706	23103859	Coil (Ferrite Bead), TEM2011
L707	23103859	Coil (Ferrite Bead), TEM2011
L708	23103859	Coil (Ferrite Bead), TEM2011
L709	23103859	Coil (Ferrite Bead), TEM2011
L710	23103859	Coil (Ferrite Bead), TEM2011
L801	23103880	Coil (Ferrite Bead), TEM2011Y
L802	23103880	Coil (Ferrite Bead), TEM2011Y
L804	23103880	Coil (Ferrite Bead), TEM2011Y
L805	23103880	Coil (Ferrite Bead), TEM2011Y
L806	23103880	Coil (Ferrite Bead), TEM2011Y
L807	23103880	Coil (Ferrite Bead), TEM2011Y
L808	23103880	Coil (Ferrite Bead), TEM2011Y
L809	23103880	Coil (Ferrite Bead), TEM2011Y
L810	23103880	Coil (Ferrite Bead), TEM2011Y
L811	23103880	Coil (Ferrite Bead), TEM2011Y
L814	23221746	Coil, Choke, TLN3155D
L815	23221746	Coil, Choke, TLN3155D
L817	23103880	Coil (Ferrite Bead), TEM2011Y
L818	23103880	Coil (Ferrite Bead), TEM2011Y
L819	23221886	Coil, Choke, TLN3073
L860	23103880	Coil (Ferrite Bead), TEM2011Y
L861	23103880	Coil (Ferrite Bead), TEM2011Y
L881	23103880	Coil (Ferrite Bead), TEM2011Y
L882	23103880	Coil (Ferrite Bead), TEM2011Y
L883	23103880	Coil (Ferrite Bead), TEM2011Y
L884	23103880	Coil (Ferrite Bead), TEM2011Y
L885	23103880	Coil (Ferrite Bead), TEM2011Y
L886	23103880	Coil (Ferrite Bead), TEM2011Y
L887	23103880	Coil (Ferrite Bead), TEM2011Y
L888	23103880	Coil (Ferrite Bead), TEM2011Y
L889	23221746	Coil, Choke, TLN3155D
L890	23103880	Coil (Ferrite Bead), TEM2011Y
L891	23103880	Coil (Ferrite Bead), TEM2011Y
L892	23103880	Coil (Ferrite Bead), TEM2011Y
L893	23103880	Coil (Ferrite Bead), TEM2011Y
L894	23103880	Coil (Ferrite Bead), TEM2011Y
L908	23237987	Coil, Peaking, TRF4100AC
LA01	23238562	Coil, Peaking, TRF4109AJ
LA02	23262996	Coil, IF, TRF1169D
LA06	23237987	Coil, Peaking, TRF4100AC
LA10	23238713	Coil, Peaking, TRF4120AJ
LB71	23238714	Coil, Peaking, TRF4100AJ
LF01	23221746	Coil, Choke, TLN3155D
LF02	23221746	Coil, Choke, TLN3155D
LM01	23262682	Coil, IF, TRF1147T
LV02	23237975	Coil, Peaking, TRF4101AC
LV05	23237978	Coil, Peaking, TRF4560AC
LV08	23237984	Coil, Peaking, TRF4180AC

Location No.	Part No.	Description
LV47	23238705	Coil, Peaking, TRF4560AJ
LY02	23238727	Coil, Peaking, TRF4332AI
LY03	23238728	Coil, Peaking, TRF4272AI
LY04	23238711	Coil, Peaking, TRF4180AJ
LY05	23238509	Coil, Peaking, TRF4151AJ
LY06	23237995	Coil, Peaking, TRF4229AC
LY07	23238510	Coil, Peaking, TRF4181AJ
LY08	23238510	Coil, Peaking, TRF4181AJ
LY10	23238506	Coil, Peaking, TRF4229AJ
LY12	23238714	Coil, Peaking, TRF4100AJ
LY13	23238702	Coil, Peaking, TRF4101AJ
LY14	23238702	Coil, Peaking, TRF4101AJ
LY17	23103866	Chip (Ferrite Bead), TEM2015T
LY18	23238708	Coil, Peaking, TRF4330AJ
LY20	23238509	Coil, Peaking, TRF4151AJ
LY21	23238708	Coil, Peaking, TRF4330AJ
LY22	23238706	Coil, Peaking, TRF4470AJ
LY23	23238710	Coil, Peaking, TRF4220AJ
LZ01	23237981	Coil, Peaking, TRF4330AC
LZ03	23237978	Coil, Peaking, TRF4560AC
LZ04	23237978	Coil, Peaking, TRF4560AC
LZ06	23238712	Coil, Peaking, TRF4150AJ
LZ07	23261052	Coil, Choke, AZ9246F
LZ08	23261996	Coil, Choke, TRF9213
LZ09	23237980	Coil, Peaking, TRF4390AC
LZ10	23237976	Coil, Peaking, TRF4820AC
LZ11	23237987	Coil, Peaking, TRF4100AC
LZ12	23237987	Coil, Peaking, TRF4100AC
LZ13	23261982	Coil, RF Choke, TRF9224D
LZ15	23237987	Coil, Peaking, TRF4100AC
T401	23224997	Transformer, Horiz. Drive, TLN1027
T420	23224997	Transformer, Horiz. Drive, TLN1027
⚠T421	23228937	Transformer, Side DPC, TPC2026
⚠T461	23236445	Transformer, Flyback, TFB5070AN
⚠T462	23224349	Transformer, Pulse, TLN2174
T470	23224346	Transformer, Focus, TLN2168
⚠T801	23211876	Line Filter, TRF3158
⚠T802	23211876	Line Filter, TRF3158
⚠T840	23217111	Transformer, Power, TPW1524AS
⚠T862	23217201	Transformer, Converter, TPW3272AD
⚠T888	23217200	Transformer, Converter, TPW3271AM

SEMICONDUCTORS

Location No.	Part No.	Description
IC183	23319199	IC, MC7805CT
IC305	B0487391	IC, TC74HC123AP
IC390	B0350510	IC, TA75558S
IC412	B0350000	IC, TA75458P
IC470	B0350510	IC, TA75558S
IC501	B0384607	IC, TA8845AN
⚠IC610	23318413	IC, LA4282
⚠IC701	23904231	IC, STK392-020
⚠IC702	23904231	IC, STK392-020
⚠IC801	23319956	IC, STR-M6515
⚠IC802	23319956	IC, STR-M6515
⚠IC840	23318299	IC, L78MR05-FA
IC841	23319858	IC, NJM78M05FA
ICA01	23904228	IC, TMP87CK42N-4

Location No.	Part No.	Description
ICA02	23319954	IC, μPD6274CX
ICA03	23319840	IC, μPD6453CY509
ICA05	B0487098	IC, TC74HC4094AP
ICA17	70119743	IC, PST523D
ICA18	23319234	IC, PST572G
ICB71	23318633	IC, CX-7948A
ICB72	B0485912	IC, TC74HC32AP
ICB76	B0487588	IC, TC74HC4066AP
⚠ICF01	23319314	IC, μPC2412HF
⚠ICF03	23319202	IC, MC7809CT
⚠ICJ01	23318840	IC, AN79M05F
⚠ICJ02	23319199	IC, MC7805CT
ICJ03	23904230	IC, PA0036
ICJ04	23904230	IC, PA0036
ICJ05	23319808	IC, M5218AP
ICJ06	23319808	IC, M5218AP
ICJ07	23319808	IC, M5218AP
ICJ08	B0475382	IC, TC4538BP
ICJ11	23319808	IC, M5218AP
ICJ12	23319808	IC, M5218AP
ICJ13	23319808	IC, M5218AP
ICJ14	23319808	IC, M5218AP
ICJ15	23319808	IC, M5218AP
ICJ16	23319808	IC, M5218AP
ICM01	23904232	IC, TMP87C832N
ICM02	B0384695	IC, TA8862P
ICN05	23319802	IC, LM358N
ICN06	B0383935	IC, TA8776N
ICV01	B0384760	IC, TA8851AN
ICY01	B0383950	IC, TA8779F
ICY03	B0412659	IC, TC9067F
ICZ04	B0589085	IC, TL8608AP
ICZ30	B0379200	IC, TA8620P
Q180	A6012050	Transistor, RN2205
Q206	A6534053	Transistor, 2SA1015-Y(TE)
Q241	A6002040	Transistor, RN1204
Q242	A6317440	Transistor, 2SC1815-Y
Q243	A6002040	Transistor, RN1204
Q246	A6317440	Transistor, 2SC1815-Y
Q260	A6002040	Transistor, RN1204
Q263	A6534053	Transistor, 2SA1015-Y(TE)
Q270	A6534053	Transistor, 2SA1015-Y(TE)
Q271	A6317440	Transistor, 2SC1815-Y
Q272	A6317440	Transistor, 2SC1815-Y
Q301	A6324961	Transistor, 2SC2229-Y
⚠Q302	A6365320	Transistor, 2SC3907-O
⚠Q303	A6549470	Transistor, 2SA1516-O
Q306	A6317440	Transistor, 2SC1815-Y
Q307	A6002020	Transistor, RN1202
Q340	A6317440	Transistor, 2SC1815-Y
Q341	A6534053	Transistor, 2SA1015-Y(TE)
Q391	A6317440	Transistor, 2SC1815-Y
Q392	A6317440	Transistor, 2SC1815-Y
Q393	A6534053	Transistor, 2SA1015-Y(TE)
Q394	A6317440	Transistor, 2SC1815-Y
Q402	A678971D	Transistor, 2SC1569 FA-5
⚠Q404	A6365284	Transistor, 2SC3893AFA-1
Q414	23314277	Transistor, 2SC2655Y-CN
Q420	A6317440	Transistor, 2SC1815-Y
Q421	A6317440	Transistor, 2SC1815-Y
Q422	A6534053	Transistor, 2SA1015-Y(TE)
Q431	A6317440	Transistor, 2SC1815-Y
Q432	A678971C	Transistor, 2SC1569 FA-4
⚠Q433	A6365284	Transistor, 2SC3893A FA-1

Location No.	Part No.	Description
⚠Q451	A6534036	Transistor, 2SA1015-O(TE)
Q452	A6317440	Transistor, 2SC1815-Y
Q458	A6317440	Transistor, 2SC1815-Y
Q471	A6357850	Transistor, 2SC3148
Q480	A6317440	Transistor, 2SC1815-Y
Q503	A6317440	Transistor, 2SC1815-Y
Q703	A6317440	Transistor, 2SC1815-Y
Q704	A6317440	Transistor, 2SC1815-Y
Q705	A6002030	Transistor, RN1203
Q706	A6734590	Transistor, 2SC752(G)TM-Y
Q707	A6317440	Transistor, 2SC1815-Y
Q708	A6734590	Transistor, 2SC752(G)TM-Y
Q709	A6317440	Transistor, 2SC1815-Y
Q710	A6534053	Transistor, 2SA1015-Y(TE)
⚠Q711	A6546665	Transistor, 2SA1306-Y
⚠Q712	A6359135	Transistor, 2SC3298A-Y
Q803	A6317440	Transistor, 2SC1815-Y
Q804	A6317440	Transistor, 2SC1815-Y
⚠Q805	A8643135	Photo Coupler, TLP621(GRL)
Q806	A6333346	Transistor, 2SC2655-Y(C)
Q807	A6317440	Transistor, 2SC1815-Y
Q808	A6010060	Transistor, RN2006
Q809	A6317440	Transistor, 2SC1815-Y
⚠Q841	A8643135	Photo Coupler, TLP621(GRL)
⚠Q845	A6907752	Transistor, S1854 FA-1
Q862	A6317440	Transistor, 2SC1815-Y
Q863	A6317440	Transistor, 2SC1815-Y
Q870	A6532853	Transistor, 2SA949-Y(C)
⚠Q902	A678970A	Transistor, 2SC1569
⚠Q903	A678970A	Transistor, 2SC1569
⚠Q904	A678970A	Transistor, 2SC1569
Q907	A6509154	Transistor, 2SA562TM-Y(T)
Q908	A6734590	Transistor, 2SC752(G)TM-Y
Q909	A6734590	Transistor, 2SC752(G)TM-Y
Q910	A6734590	Transistor, 2SC752(G)TM-Y
Q911	A6321265	Transistor, 2SC2120-Y(TE)
Q917	A6734590	Transistor, 2SC752(G)TM-Y
QA11	A6534053	Transistor, 2SA1015-Y(TE)
QA12	A6534053	Transistor, 2SA1015-Y(TE)
QA13	A6534053	Transistor, 2SA1015-Y(TE)
QA14	A6317440	Transistor, 2SC1815-Y
QA15	A6342206	Transistor, 2SC2878-A(TE)
QA16	A6342206	Transistor, 2SC2878-A(TE)
QA19	A6002010	Transistor, RN1201
QA20	A6317440	Transistor, 2SC1815-Y
QB24	A6534053	Transistor, 2SA1015-Y(TE)
QB59	A6534053	Transistor, 2SA1015-Y(TE)
QB60	A6317440	Transistor, 2SC1815-Y
QB74	A6317440	Transistor, 2SC1815-Y
QB75	A6317440	Transistor, 2SC1815-Y
QB77	A6534053	Transistor, 2SA1015-Y(TE)
QB78	A6317440	Transistor, 2SC1815-Y
QB79	A6317440	Transistor, 2SC1815-Y
QB80	A6317440	Transistor, 2SC1815-Y
QB81	A6317440	Transistor, 2SC1815-Y
QB82	A6317440	Transistor, 2SC1815-Y
QB83	A6002060	Transistor, RN1206
QB84	A6002060	Transistor, RN1206
QB85	A6317440	Transistor, 2SC1815-Y
QG01	A6002030	Transistor, RN1203
QG02	A6002030	Transistor, RN1203
QM03	A6317440	Transistor, 2SC1815-Y
QM04	A6534053	Transistor, 2SA1015-Y(TE)
QN13	A6342206	Transistor, 2SC2878-A(TE)

Location No.	Part No.	Description
QN14	A6342206	Transistor, 2SC2878-A(TE)
⚠QN16	A6317764	Transistor, 2SC1815-GR
QS38	A6317440	Transistor, 2SC1815-Y
QS49	A6317440	Transistor, 2SC1815-Y
QV07	A6534053	Transistor, 2SA1015-Y(TE)
QV10	A6534053	Transistor, 2SA1015-Y(TE)
QV11	A6317440	Transistor, 2SC1815-Y
QV31	A6317440	Transistor, 2SC1815-Y
QV40	A6534053	Transistor, 2SA1015-Y(TE)
QV41	A6317440	Transistor, 2SC1815-Y
QV42	A6534053	Transistor, 2SA1015-Y(TE)
QY10	A6541137	Transistor, 2SA1162-Y
QY11	A6335477	Transistor, 2SC2712-Y
QY12	A6335477	Transistor, 2SC2712-Y
QY13	A6335477	Transistor, 2SC2712-Y
QY14	A6004020	Transistor, RN1402
QY15	A6541137	Transistor, 2SA1162-Y
QY16	A6541137	Transistor, 2SA1162-Y
QY17	A6541137	Transistor, 2SA1162-Y
QY18	A6541137	Transistor, 2SA1162-Y
QY19	A6335477	Transistor, 2SC2712-Y
QY20	A6335477	Transistor, 2SC2712-Y
QY21	A6335477	Transistor, 2SC2712-Y
QY22	A6335477	Transistor, 2SC2712-Y
QY23	A6541137	Transistor, 2SA1162-Y
QY24	A6043330	Transistor, 2SK209-Y
QY25	A6541137	Transistor, 2SA1162-Y
QY26	A6541137	Transistor, 2SA1162-Y
QY27	A6541137	Transistor, 2SA1162-Y
QY28	A6043330	Transistor, 2SK209-Y
QY29	A6541137	Transistor, 2SA1162-Y
QY30	A6335480	Transistor, 2SC2712-GR
QY31	A6335477	Transistor, 2SC2712-Y
QY32	A6335477	Transistor, 2SC2712-Y
QY33	A6541137	Transistor, 2SA1162-Y
QY34	A6335477	Transistor, 2SC2712-Y
QY35	A6043330	Transistor, 2SK209-Y
QY36	A6335477	Transistor, 2SC2712-Y
QY41	A6335477	Transistor, 2SC2712-Y
QY42	A6004020	Transistor, RN1402
QZ03	A6534053	Transistor, 2SA1015-Y(TE)
QZ05	A6534053	Transistor, 2SA1015-Y(TE)
QZ06	A6534053	Transistor, 2SA1015-Y(TE)
QZ07	A6317440	Transistor, 2SC1815-Y
QZ10	A6317440	Transistor, 2SC1815-Y
QZ14	A6317440	Transistor, 2SC1815-Y
QZ25	A6534053	Transistor, 2SA1015-Y(TE)
D060	23316411	Diode, Zener, HZT33-12
D182	A7150258	Diode, 1SS176
D183	A7150258	Diode, 1SS176
D204	A7150258	Diode, 1SS176
D215	A7150258	Diode, 1SS176
D216	A7150258	Diode, 1SS176
D217	A7150258	Diode, 1SS176
D218	A7150258	Diode, 1SS176
D219	A7150258	Diode, 1SS176
D220	A7150258	Diode, 1SS176
D221	23316339	Diode, Zener, UZ15BSB
D222	23316339	Diode, Zener, UZ15BSB
D223	23316339	Diode, Zener, UZ15BSB
D224	23316339	Diode, Zener, UZ15BSB
D225	A7150258	Diode, 1SS176
D226	23316339	Diode, Zener, UZ15BSB
D228	A7150258	Diode, 1SS176
D229	A7150258	Diode, 1SS176
D260	23316311	Diode, Zener, UZ6.2BSA
D261	A7150258	Diode, 1SS176
D265	23316339	Diode, Zener, UZ15BSB
D271	A7150258	Diode, 1SS176
D287	A7150258	Diode, 1SS176
D288	A7150258	Diode, 1SS176
D290	A7150258	Diode, 1SS176
D291	23316301	Diode, Zener, UZ4.7BSA
D301	A7150258	Diode, 1SS176
D302	A7150258	Diode, 1SS176
D303	A7150258	Diode, 1SS176
D305	A7150258	Diode, 1SS176
D307	A7150258	Diode, 1SS176
D308	A7150258	Diode, 1SS176
D390	23316318	Diode, Zener, UZ7.5BSB
D401	23316333	Diode, Zener, UZ12BSB
D402	23316325	Diode, Zener, UZ9.1BSC
D403	23316284	Diode, Zener, UZ2.2BSA
D404	23316306	Diode, Zener, UZ5.1BSB
⚠D406	A7978850	Diode, S5295G
⚠D408	A7580658	Diode, 3JH41
⚠D412	A7580658	Diode, 3JH41
⚠D424	23115878	Diode, Zener, µPC574J, (L)
D437	23316321	Diode, Zener, UZ8.2BSB
D458	A7150258	Diode, 1SS176
⚠D462	A7978850	Diode, S5295G
D470	23316321	Diode, Zener, UZ8.2BSB
D471	A7568460	Diode, TVR-1B
⚠D473	A7150258	Diode, 1SS176
⚠D475	23115774	Diode, Zener, RD6.2E(4)
D476	A7150258	Diode, 1SS176
D480	A7150258	Diode, 1SS176
D481	A7150258	Diode, 1SS176
D484	23316339	Diode, Zener, UZ15BSB
D486	23316302	Diode, Zener, UZ4.7BSB
D495	A7150258	Diode, 1SS176
D703	A7150258	Diode, 1SS176
D704	A7150258	Diode, 1SS176
D705	A7150258	Diode, 1SS176
D706	A7568475	Diode, TVR-2D
D707	A7568475	Diode, TVR-2D
⚠D801	23316693	Diode, RBV-606
D802	A7568752	Diode, 1S1887A
D803	23316381	Diode, RU1P
D804	23316381	Diode, RU1P
D805	23316305	Diode, Zener, UZ5.1BSA
⚠D806	23316363	Diode, Zener, UZ30BSB
D807	23316327	Diode, Zener, UZ10BSB
D808	23118060	Diode, AL01Z
D809	23118060	Diode, AL01Z
D810	23118060	Diode, AL01Z
⚠D811	23316406	Diode, FML-G16S
⚠D812	23316406	Diode, FML-G16S
D813	23316306	Diode, Zener, UZ5.1BSB
D814	A7150258	Diode, 1SS176
D815	23316348	Diode, Zener, UZ20BSB
D816	23316374	Diode, Zener, UZ39BSA
D817	A7150351	Diode, 1SS178
D818	A7150258	Diode, 1SS176
D819	A7150258	Diode, 1SS176
⚠D840	23115532	Diode, ERB12-01RK
⚠D841	23115532	Diode, ERB12-01RK
⚠D842	23115532	Diode, ERB12-01RK

Location No.	Part No.	Description
⚠D843	23115532	Diode, ERB12-01RK
D844	A7150258	Diode, 1SS176
D845	A7150351	Diode, 1SS178
D846	23316306	Diode, Zener, UZ5.1BSB
D847(U801)	A7150258	Diode, 1SS176
D847(U901)	23115532	Diode, ERB12-01RK
D848	23316351	Diode, Zener, UZ22BSB
D849	23316327	Diode, Zener, UZ10BSB
D860	23316305	Diode, Zener, UZ5.1BSA
⚠D861	23316363	Diode, Zener, UZ30BSB
D862	A7801166	SCR, SF0R3G42-IG5
D863	A7568752	Diode, 1S1887A
D864	23118060	Diode, AL01Z
D865	23118060	Diode, AL01Z
D866	23118060	Diode, AL01Z
D867	23316327	Diode, Zener, UZ10BSB
D870	23316370	Diode, Zener, UZ36BSA
D878	23316370	Diode, Zener, UZ36BSA
D879	A7150351	Diode, 1SS178
⚠D883	23316406	Diode, FML-G16S
⚠D884	23316184	Diode, FML-G12S
⚠D885	23316406	Diode, FML-G16S
D888	23118339	Diode, Zener, R2M
D901	A7150258	Diode, 1SS176
D902	A7150258	Diode, 1SS176
D903	A7150258	Diode, 1SS176
D904	A7150258	Diode, 1SS176
D905	A7150258	Diode, 1SS176
D906	A7150258	Diode, 1SS176
D907	A7150258	Diode, 1SS176
D908	A7150258	Diode, 1SS176
D909	A7150258	Diode, 1SS176
D910	A7150258	Diode, 1SS176
D911	A7150258	Diode, 1SS176
D912	A7150258	Diode, 1SS176
D913	A7150258	Diode, 1SS176
D914	A7150258	Diode, 1SS176
D917	A7150258	Diode, 1SS176
D918	A7150258	Diode, 1SS176
DA07	23316327	Diode, Zener, UZ10BSB
DA09	A7150258	Diode, 1SS176
DA10	23316308	Diode, Zener, UZ5.6BSA
DA18	23316311	Diode, Zener, UZ6.2BSA
DA22	23316311	Diode, Zener, UZ6.2BSA
DA25	A7150258	Diode, 1SS176
DA26	A7150258	Diode, 1SS176
DA27	A7150258	Diode, 1SS176
DA31	23316311	Diode, Zener, UZ6.2BSA
DA32	23316311	Diode, Zener, UZ6.2BSA
DA33	A7150258	Diode, 1SS176
DA42	23316311	Diode, Zener, UZ6.2BSA
DA43	A7150258	Diode, 1SS176
DA44	A7150258	Diode, 1SS176
DA45	A7150258	Diode, 1SS176
DA46	A7150258	Diode, 1SS176
DA47	A7150258	Diode, 1SS176
DA71	23316312	Diode, Zener, UZ6.2BSB
DA73	23316311	Diode, Zener, UZ6.2BSA
DB70	23316312	Diode, Zener, UZ6.2BSB
DB71	23316312	Diode, Zener, UZ6.2BSB
DB74	A7150258	Diode, 1SS176
DB75	23316311	Diode, Zener, UZ6.2BSA
DB76	23316311	Diode, Zener, UZ6.2BSA
DE50	A8608780	Diode (LED), TLY153, Yellow

Location No.	Part No.	Description
DG01	A7150258	Diode, 1SS176
DG02	A7150258	Diode, 1SS176
DG03	A7150258	Diode, 1SS176
DG04	A7150258	Diode, 1SS176
DG05	23316339	Diode, Zener, UZ15BSB
DG06	23316339	Diode, Zener, UZ15BSB
DJ02	A7150258	Diode, 1SS176
DJ03	A7150258	Diode, 1SS176
DJ04	A7150258	Diode, 1SS176
DJ05	A7150258	Diode, 1SS176
DJ06	A7150258	Diode, 1SS176
DJ07	A7150258	Diode, 1SS176
DJ08	A7150258	Diode, 1SS176
DJ09	A7150258	Diode, 1SS176
DJ10	A7150258	Diode, 1SS176
DJ11	A7150258	Diode, 1SS176
DJ12	A7150258	Diode, 1SS176
DJ13	A7150258	Diode, 1SS176
DJ14	A7150258	Diode, 1SS176
DJ15	A7150258	Diode, 1SS176
DJ16	A7150258	Diode, 1SS176
DJ17	A7150258	Diode, 1SS176
DN05	23316334	Diode, Zener, UZ12BSC
DN06	23316334	Diode, Zener, UZ12BSC
DN15	23316285	Diode, Zener, UZ2.2BSB
DV01	23316327	Diode, Zener, UZ10BSB
DV02	23316327	Diode, Zener, UZ10BSB
DV03	23316327	Diode, Zener, UZ10BSB
DV04	23316327	Diode, Zener, UZ10BSB
DV07	23316327	Diode, Zener, UZ10BSB
DV08	23316327	Diode, Zener, UZ10BSB
DV09	23316327	Diode, Zener, UZ10BSB
DV10	A7150258	Diode, 1SS176
DV11	A7150258	Diode, 1SS176
DV12	A7150258	Diode, 1SS176
DV13	A7150258	Diode, 1SS176
DV19	23316312	Diode, Zener, UZ6.2BSB
DV20	23316312	Diode, Zener, UZ6.2BSB
DV24	A7568752	Diode, 1S1887A
DV25	A7568752	Diode, 1S1887A
DY01	A7151100	Diode, 1SS193
DY02	A7151100	Diode, 1SS193
DY03	A7151100	Diode, 1SS193
DY17	A7151100	Diode, 1SS193
DY30	A7152750	Diode, 1SS226
DZ01	23316320	Diode, Zener, UZ8.2BSA
DZ09	23316339	Diode, Zener, UZ15BSB

MISCELLANEOUS

Location No.	Part No.	Description
BB03	23902750	Connector, 7P
BB04	23902751	Connector, 8P
BB05	23902751	Connector, 8P
BB13	23368518	Connector, 7P
BB14	23368519	Connector, 8P
BB15	23368519	Connector, 8P
⚠F701	23144841	Fuse, 2.0A
⚠F702	23144841	Fuse, 2.0A
⚠F801	23144481	Fuse, 7.0A
F801A	23165433	Holder, Fuse
⚠F803	23144888	Fuse, 5.0A
F803A	23165433	Holder, Fuse
⚠F804	23144849	Fuse, 2.0A
F804A	23165433	Holder, Fuse
⚠F806	23144893	Fuse, 3.15A

Location No.	Part No.	Description
F806A	23165433	Holder, Fuse
⚠F883	23144888	Fuse, 5.0A
F883A	23165433	Holder, Fuse
⚠F884	23144854	Fuse, 1.6A
F884A	23165433	Holder, Fuse
H002	23148161	Module, US PIF/SIF/MTS, MVUS31
P002	23365089	F Connector, Antenna Terminal
P003	23161571	Terminal, 4P
P411	23164722	Plug, 5P
P414	23164725	Plug, 2P
P702	23164787	Plug, 7P
⚠P801	23176588	Power Cord
P811	23164722	Plug, 5P
PM01	23367681	Plug, 8P
PS10	23365711	Jack, 1S6P
PS11	23365711	Jack, 1S6P
PS20	23365711	Jack, 1S6P
PS21	23365711	Jack, 1S6P
PS50	23365712	Jack, 5P
PS51	23365712	Jack, 5P
PS62	23365712	Jack, 5P
PS63	23365712	Jack, 5P
PV10	23365711	Jack, 1S6P
PV11	23365711	Jack, 1S6P
PV21	23365711	Jack, 1S6P
PV30	23902649	Socket, 9P
PV31	23902655	Socket, 15P
PV32	23367721	Connector, 9P
PV33	23367724	Connector, 15P
PV40	23365374	Jack, 1S3P
PV51	23365712	Jack, 5P
PV63	23164560	Plug, 6P
PY01	23368130	Connector, 10P
PY01A	23902213	Connector, 10P
PY02	23368511	Connector, 7P
PY02A	23902852	Connector, 7P
PZ01	23368006	Connector, 8P
PZ01A	23902064	Connector, 8P
S601	23145356	Switch, Slide, 4C2P
SA01	23145226	Switch, Push, 1C1P
SA02	23145226	Switch, Push, 1C1P
SA05	23145226	Switch, Push, 1C1P
SA06	23145226	Switch, Push, 1C1P
SA07	23145226	Switch, Push, 1C1P
SA08	23145226	Switch, Push, 1C1P
SA09	23145226	Switch, Push, 1C1P
SA10	23145579	Switch, Push, 2C2P
SJ01	23344070	Switch, Slide, 1C2P
SJ010	23344070	Switch, Slide, 1C2P
SJ02	23145682	Switch, Lever, 1C3P
⚠SR81	23146933	Relay, 1A
⚠T461A	23192900	Anode Cap, TCCP5144, 50kV
⚠V901A	23902019	Socket, CRT, 10P
⚠V902A	23902019	Socket, CRT, 10P
⚠V903A	23902019	Socket, CRT, 10P
W661	23151232	Speaker, SPK-1235, 160x160mm, 8 ohm
W662	23151232	Speaker, SPK-1235, 160x160mm, 8 ohm
X201	23250120	Coil, Delay-Line, TRF2133T
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153961	Crystal, 3.58MHz

Location No.	Part No.	Description
XA01	23153325	Ceramic Resonator, TCR1056
XA02	23153860	Crystal, 32.768kHz
XB70	23153961	Crystal, 3.58MHz
XB71	23107712	Filter, TEM1012T
XB72	23107712	Filter, TEM1012T
XB73	23107712	Filter, TEM1012T
XB74	23107712	Filter, TEM1012T
XM01	23153325	Ceramic Resonator, TCR1056
XY01	23153886	Ceramic Resonator, 503kHz, TCR1012
XY02	23153961	Crystal, 3.58MHz
XZ01	23250876	Coil, Delay Line, TRF2081
⚠Z410	23110834	Focus Pack, TPA6026
Z470	23110835	Focus Power Block, TPA6025A
ZM03	23153721	Ceramic Resonator, 503kHz, TCR1023
ZY01	23107742	Filter, TEM1014
ZY05	23262674	Coil, IF, 17.5MHz, TRF1164D
ZY06	23262674	Coil, IF, 17.5MHz, TRF1164D
ZZ01	23107838	Ceramic Filter, 10.7MHz, TCF1034

PC BOARD ASSEMBLIES

U021Z	23701482	CONVER-Control Board, PB3366-1
U022Z	23701501	CONVER-Out Board, PB3366-2
U401	23701477	Def/H.V. Board, PB3361
U801	23701480	Power Board, PB3364
U901	23701573	Main Board, PB3468
UM01	23701498	Closed Caption Board, PB3375
UX01	23701500	PIP Board, PB3377
UZ01	23701574	S-CCD Board, PB3469
M031Z	23701575	Front-Control Board, PB3470-1
M032Z	23701572	Front-In Board, PB3470-2
M041Z	23701502	CRT Drive (Red) Board, PB3368-1
M042Z	23701503	CRT Drive (Green) Board, PB3368-2
M043Z	23701504	CRT Drive (Blue) Board, PB3368-3
M044Z	23701484	A/V Board, PB3368-4

PICTURE TUBE

⚠V901R	23791382	Projection Tube Assembly, Red
⚠V902G	23791383	Projection Tube Assembly, Green
⚠V903B	23791384	Projection Tube Assembly, Blue

TUNER

⚠H001	23321042	Tuner, VHF/UHF, EL821L

ACCESSORIES

K912	23120261	Remote Hand Unit, CT-9670
AT01	23305211	Upper Case
AT02	23305212	Battery Cover
AT03	23305213	Filter
Y101	23561813	Owner's Manual, English, TP48C51/TP48C50
Y101	23561925	Owner's Manual, English/French, PJ48C50
Y106	23994678	TESC Sheet
Y107	23142003	Adapter, Antenna Matching, AD503J

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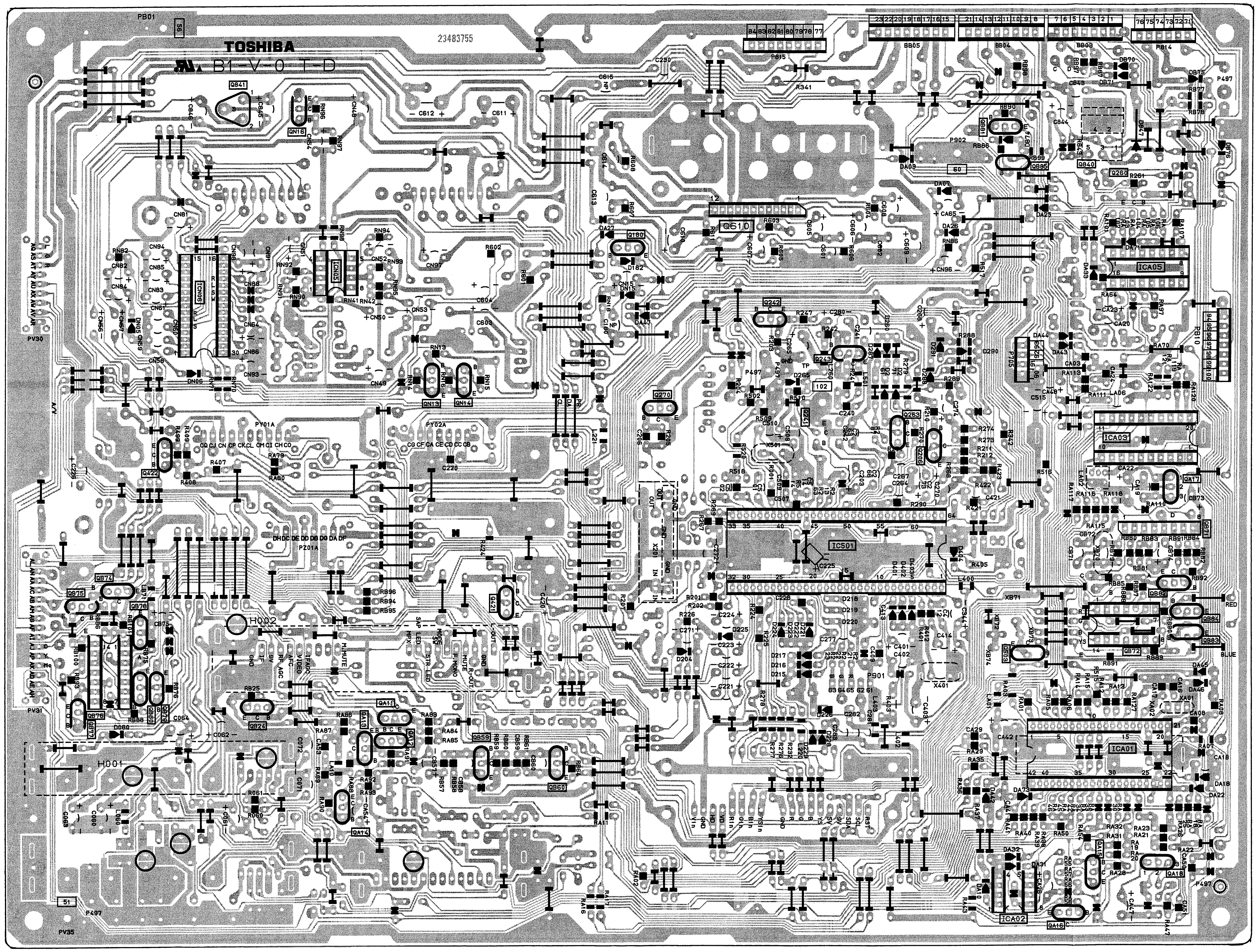
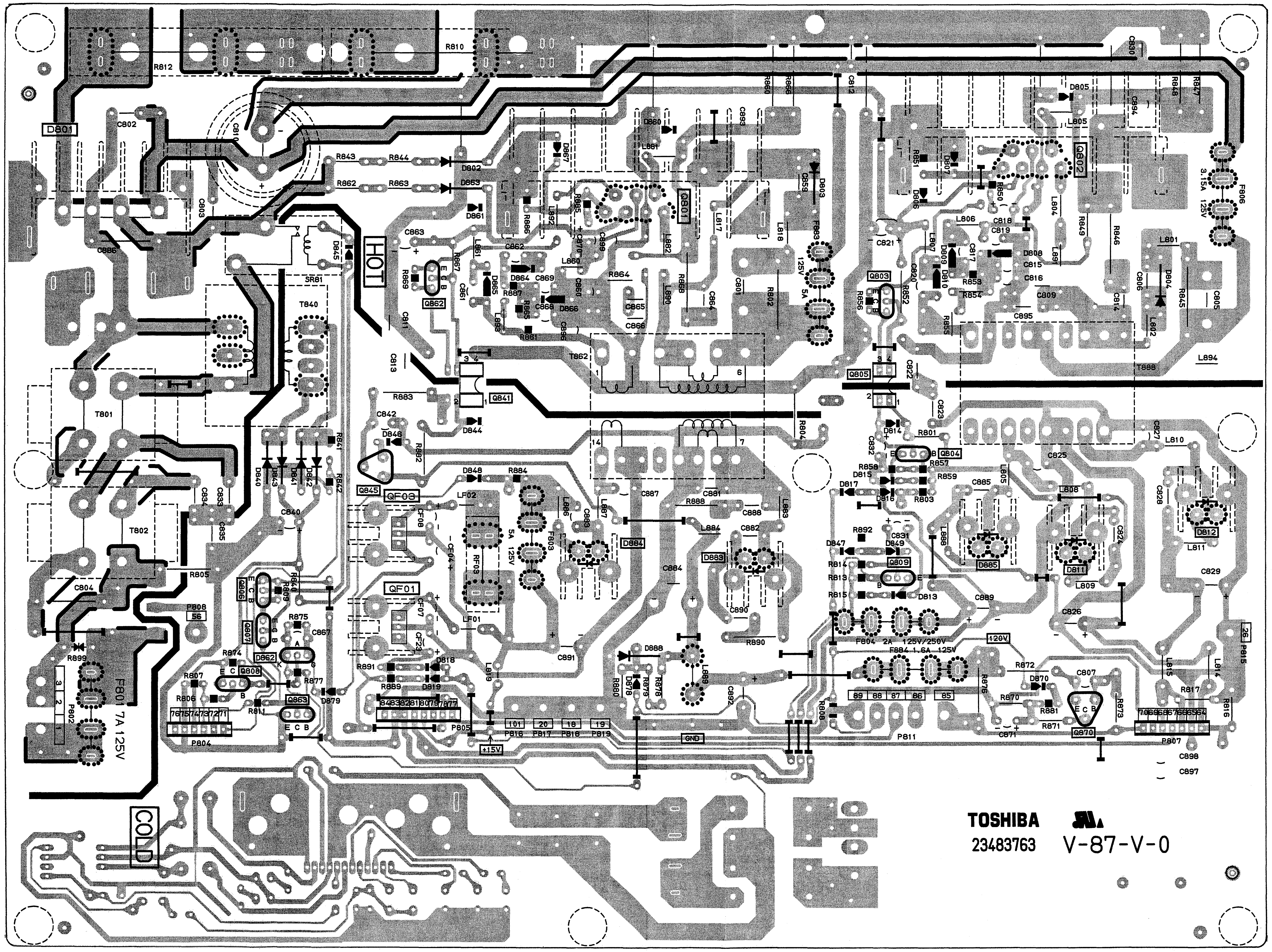
MAIN BOARD PB3468

BOTTOM (FOIL) SIDE



POWER BOARD PB3364

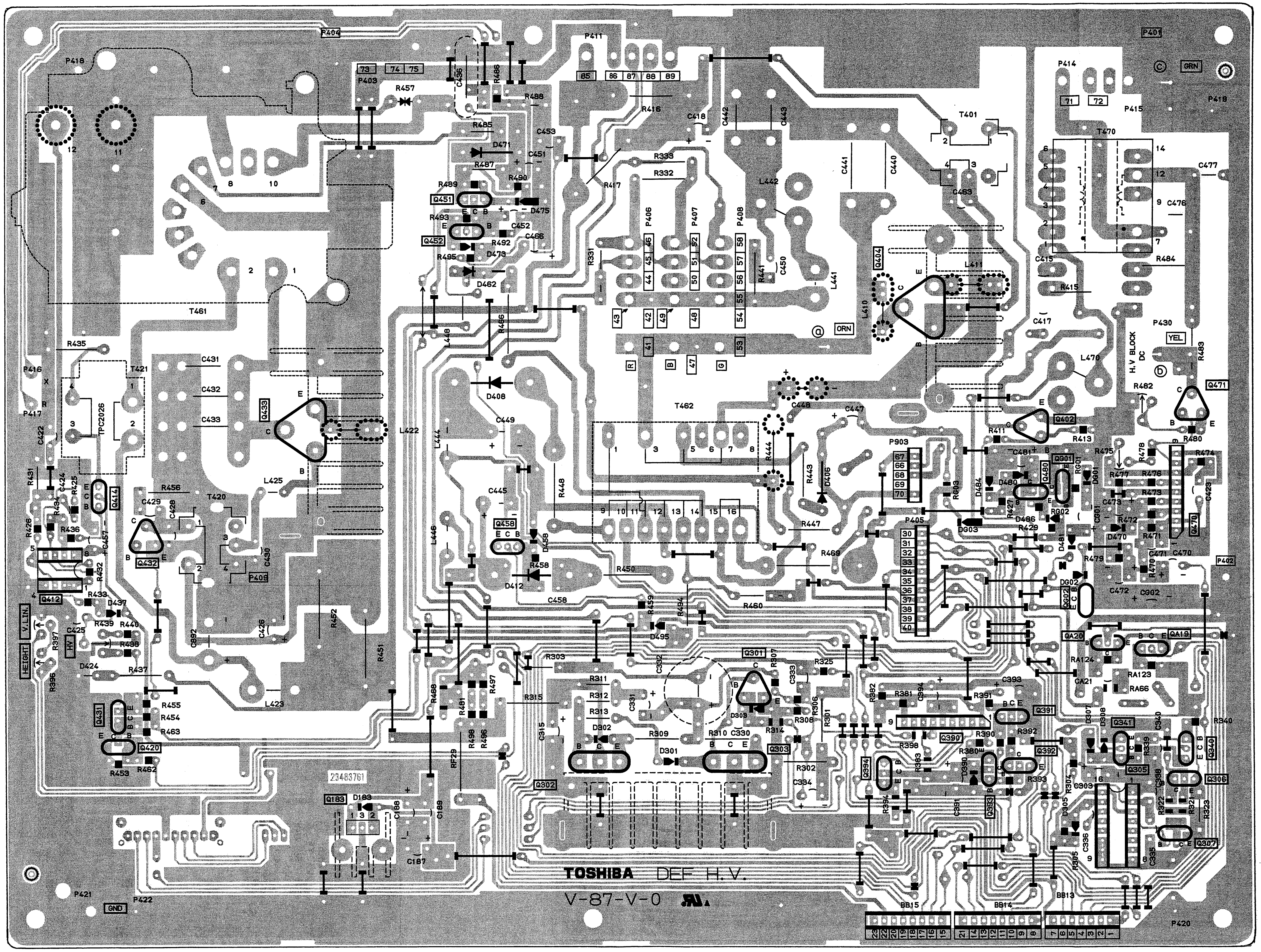
BOTTOM (FOIL) SIDE



HOT
COLD
TOSHIBA
23483763
V-87-V-0
T801
T802
T840
T862
T888
F801 7A 125V
F806 3.15A 125V
F803 5A 125V
F804 2A 125V/250V
F884 1.6A 125V
120V
+15V
GND

DEF/HV BOARD PB3361

BOTTOM (FOIL) SIDE



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P418
P403
R457
C436
R486
R488
P411
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86
87
88
89
R416
C418
C442
C443
P401
P414
71
72
P415
P419
GRN
T401
T470
C477
C476
R484
C415
R415
L411
Q404
L410
ORN
P430
YEL
H.V BLOCK DC
R483
Q471
R482
L470
C417
Q402
R411
R413
R480
R485
C453
D471
C451
R487
R490
R489
Q451
D475
R493
Q452
R492
C452
C466
R495
D473
D462
R333
R332
R417
P406
P407
P408
L442
C463
C441
C440
R331
R441
C450
L441
T461
T421
TPC2026
R435
P416
P417
C431
C432
C433
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R456
D408
C449
L444
T462
C448
C447
P903
R444
R443
D406
R447
R469
P405
C445
Q458
D458
R458
D412
R450
C458
R448
L446
R456
T420
L425
C429
C428
Q432
C430
P409
R431
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R425
Q414
R426
R436
C457
R432
Q412
R433
D437
R439
R440
R438
C425
R397
R396
D424
R437
V.LIN.
HV
HEIGHT
C426
C392
R452
R451
L423
Q431
R455
R454
R463
Q420
R453
R462
R459
R434
D495
R460
R488
R491
R497
R498
R496
RF29
R303
R311
R312
R313
R315
C315
D302
R309
D301
Q302
Q301
R307
C332
C331
C333
D303
R310
C330
R314
R308
R306
R301
Q303
R302
C334
R325
R382
R381
C394
R391
C393
Q391
Q390
R390
R392
R398
R380
R383
Q392
Q394
R394
D390
Q393
R393
C391
R304
C303
D305
C336
R305
C335
D307
D308
Q341
C340
R339
R340
Q340
Q305
C338
Q306
R322
R321
R323
Q307
QA20
QA19
RA124
RA123
CA21
RA66
R475
R478
R474
R477
R476
R473
C473
R472
D470
R471
Q470
C423
C471
C470
R470
P402
C472
C902
D902
Q902
D480
Q490
Q901
R901
D901
R903
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D486
D903
R902
R429
D481
R479
C481
R427
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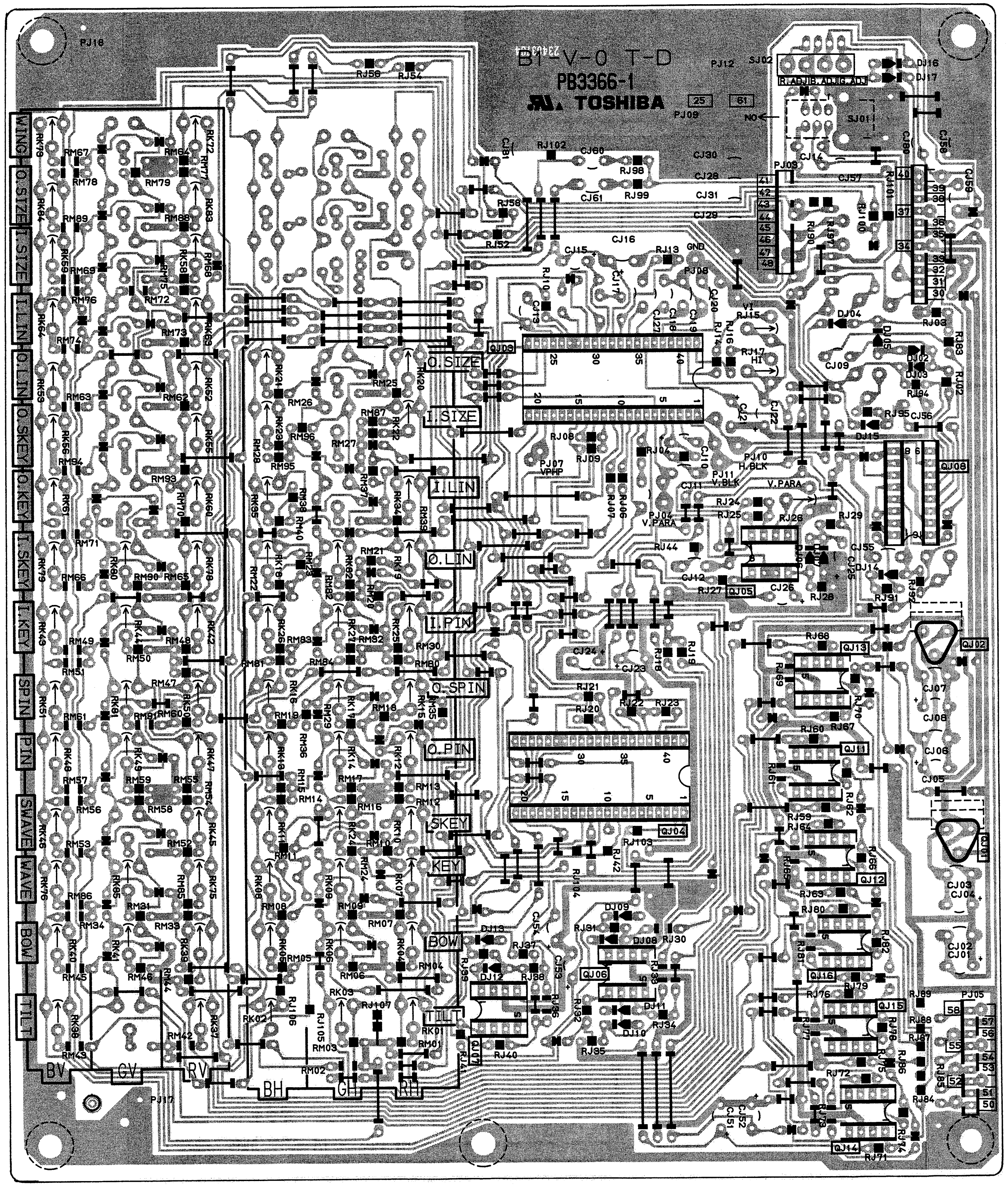
Q183
D183
C186
C188
C187
TOSHIBA
DEF H.V.
V-87-V-0
P421
P422
GND
BB15
BB14
BB13
P420

CONVER CONTROL BOARD PB3366-1

BOTTOM (FOIL) SIDE


B1-V-0 T-D
PB3366-1
TOSHIBA
WING
O.SIZE
I.SIZE
I.LIN
O.LIN
O.SKEY
O.KEY
I.SKEY
I.KEY
SPIN
PIN
SWAVE
WAVE
BOW
TILT
BV
GV
RV
BH
GH
RH
O.SIZE
I.SIZE
I.LIN
O.LIN
I.PIN
O.SPIN
O.PIN
SKEY
KEY
BOW
TILT
R.ADJ
B.ADJ
G.ADJ
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V.PARA
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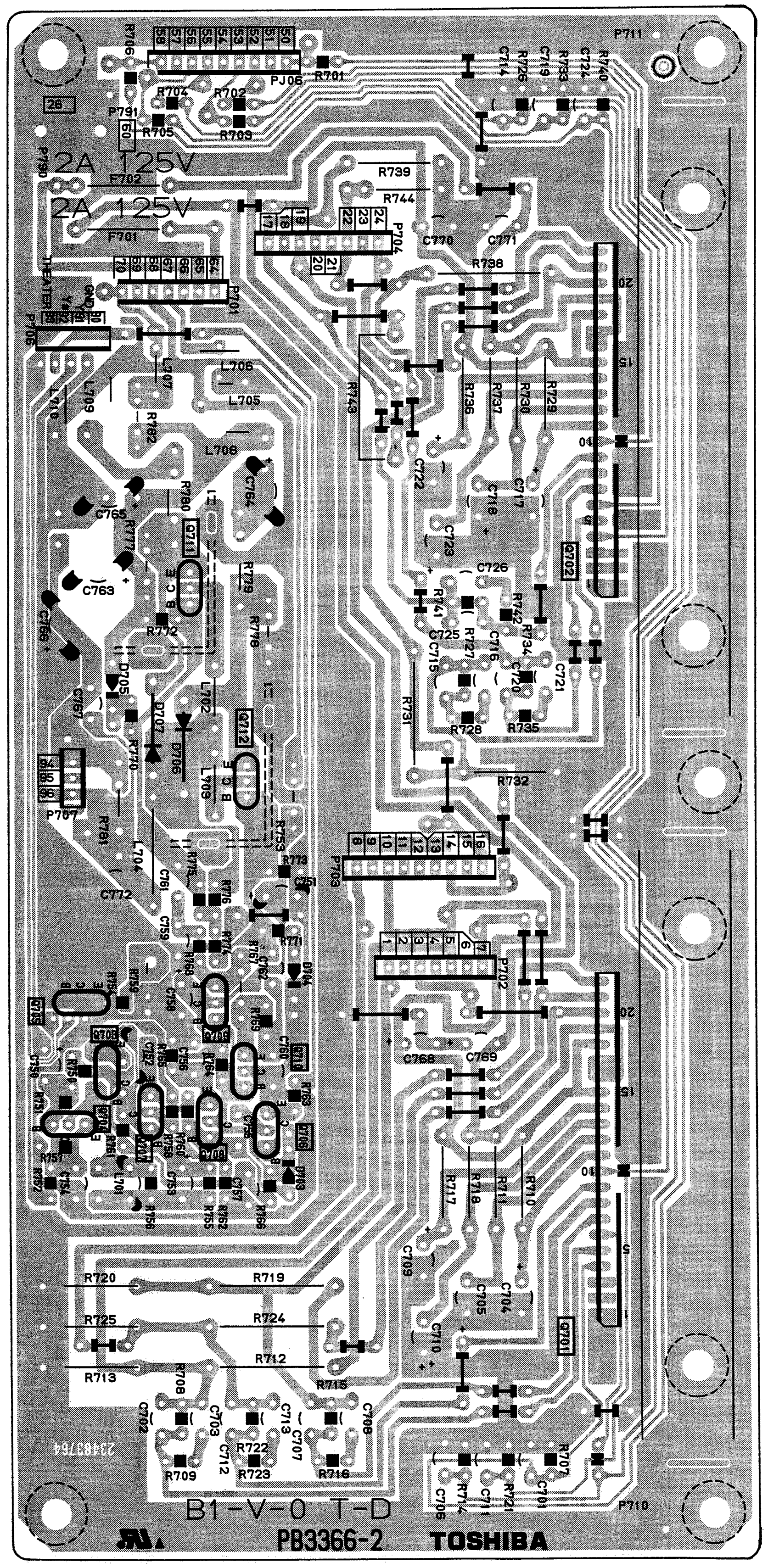
V.BLK
VPHP
PJ16
PJ17

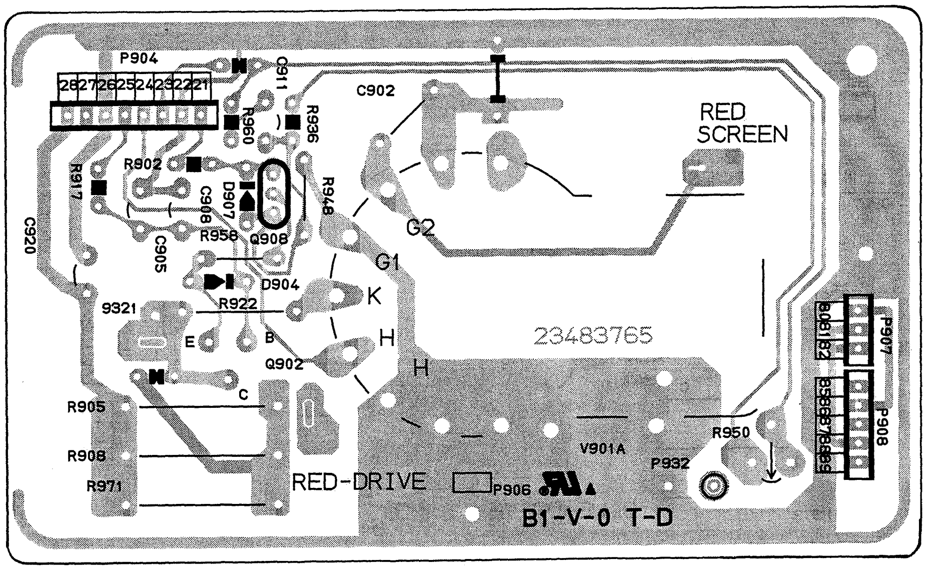
CONVER OUT BOARD PB3366-2

BOTTOM (FOIL) SIDE


2A 125V
F702
2A 125V
F701
HEATER
P706
P707
P703
P702
P704
P701
P706
P710
P711
B1-V-0 T-D
PB3366-2
TOSHIBA

RED DRIVE BOARD PB3368-1

BOTTOM (FOIL) SIDE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28 27 26 25 24 23 22 21
C911
C902
R960
R936
RED
SCREEN
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R917
C908
D907
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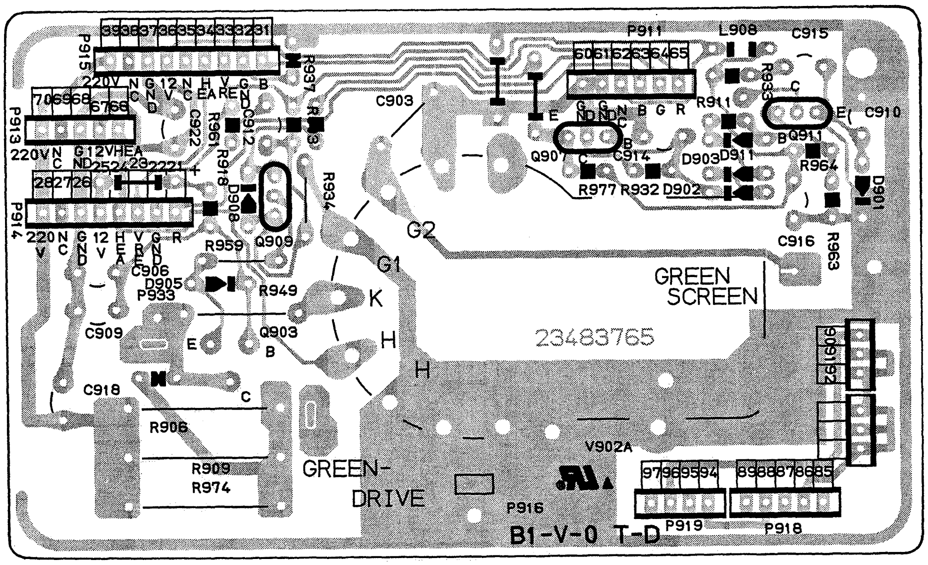
C920
C905
R958
Q908
G2
G1
D904
K
9321
R922
E
B
H
Q902
23483765
H
C
R905
R908
R971
RED-DRIVE
P906
V901A
P932
R950
P907
80 81 82
P908
85 86 87 88 89
B1-V-0 T-D

GREEN DRIVE BOARD PB3368-2

BOTTOM (FOIL) SIDE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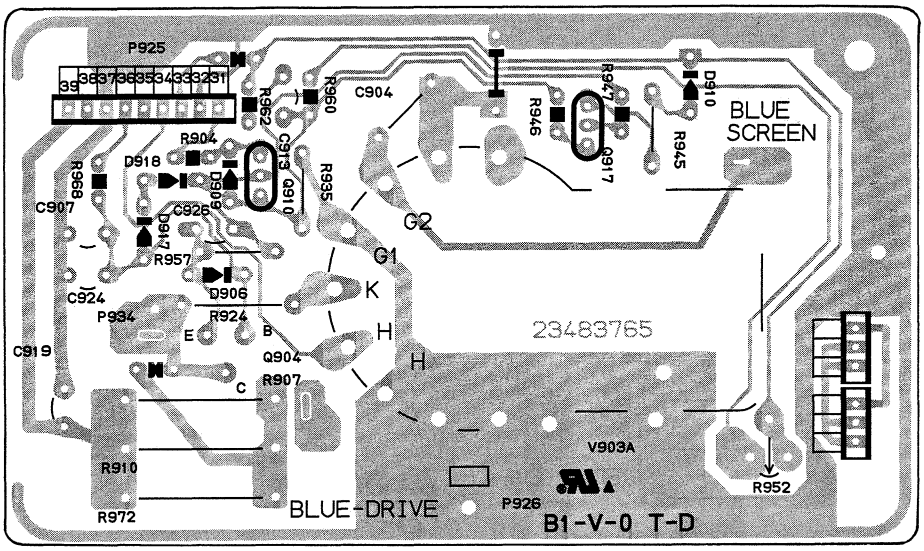
P915
P911
L908
C915
60 61 62 63 64 65
R937
R933
P913
70 69 68 67 66
220V NC GND 12V NC HEA REN VRED GND B
C922
R961
C912
R918
R963
C903
E
GND GND NC B G R
R911
C
C910
Q907
C914
Q911
220VNC GND 12VHEA
25 24 23 22 21
28 27 26
P914
220V NC GND 12V HEA VRED GND R
D908
R934
R977
R932
D902
D903
D911
R964
D901
R959
Q909
G2
G1
C906
D905
P933
R949
K
C916
R963
GREEN
SCREEN
C909
E
Q903
B
H
H
23483765
C918
C
R906
R909
R974
GREEN-
DRIVE
V902A
90 91 92
97 96 95 94
89 88 87 86 85
P916
P919
P918
B1-V-0 T-D

BLUE DRIVE BOARD PB3368-3

BOTTOM (FOIL) SIDE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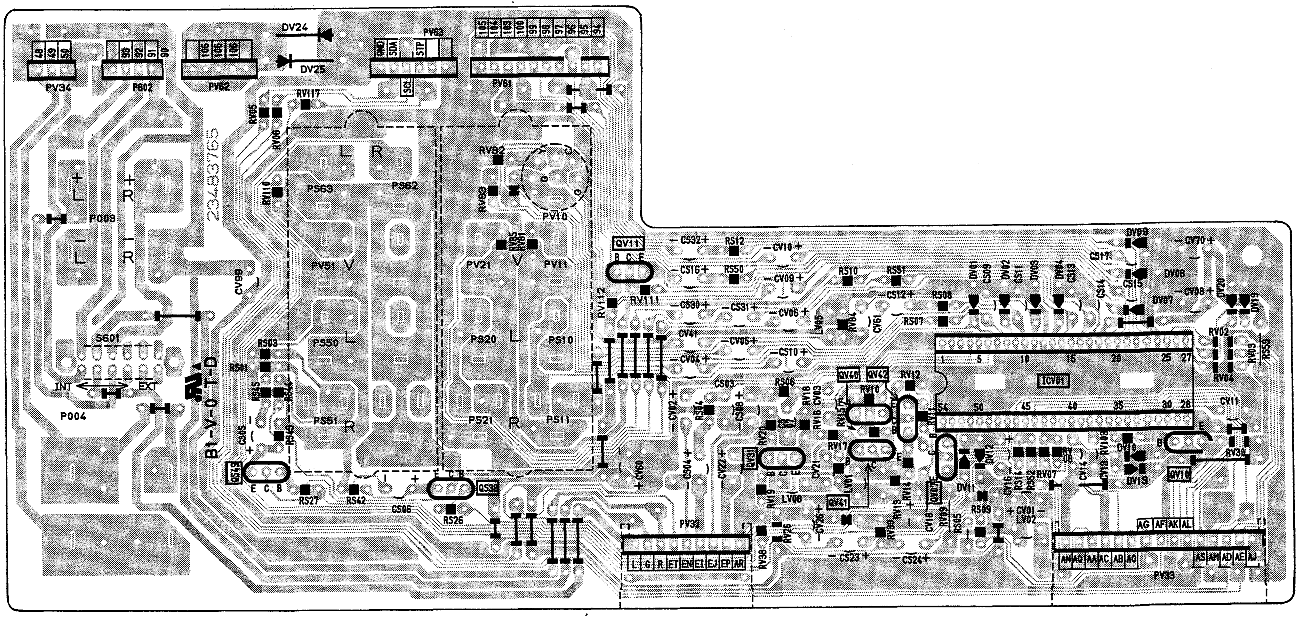
R962
R960
C904
R947
D910
R946
BLUE SCREEN
R945
Q917
R904
C913
Q910
R935
D918
R968
D909
C907
C926
D917
G2
R957
G1
D906
K
C924
P934
R924
E
B
H
C919
Q904
R907
C
23483765
V903A
R910
R952
R972
BLUE-DRIVE
P926
B1-V-0 T-D

A/V BOARD PB3368-4

BOTTOM (FOIL) SIDE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DV25
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SDA
STP
SCL
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RV117
RV05
RV06
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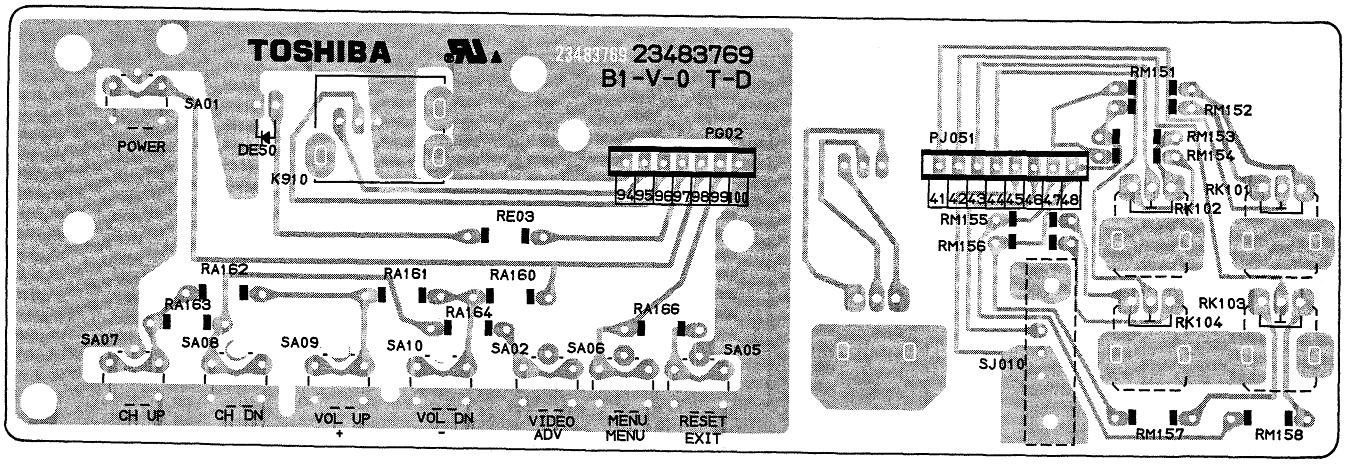
PS63
PS62
L
R
RV82
RV83
PV10
P009
PV51
V
PV21
PV11
QV11
RV111
RV112
S601
INT
EXT
P004
PS50
PS20
PS10
PS51
PS21
PS11
B1-V-0 T-D
CV99
ICV01
PV32
PV33
QV10

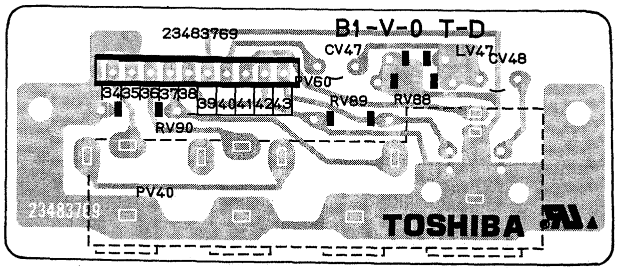
FRONT CONTROL BOARD PB3470-1

BOTTOM (FOIL) SIDE


TOSHIBA
23483769
B1-V-0 T-D
SA01
POWER
DE50
K910
PG02
94 95 96 97 98 99 100
RE03
RA162
RA161
RA160
RA163
RA164
RA166
SA07
SA08
SA09
SA10
SA02
SA06
SA05
CH UP
CH DN
VOL UP
+
VOL DN
-
VIDEO
ADV
MENU
MENU
RESET
EXIT
PJ051
41 42 43 44 45 46 47 48
RM151
RM152
RM153
RM154
RM155
RM156
RK101
RK102
RK103
RK104
SJ010
RM157
RM158

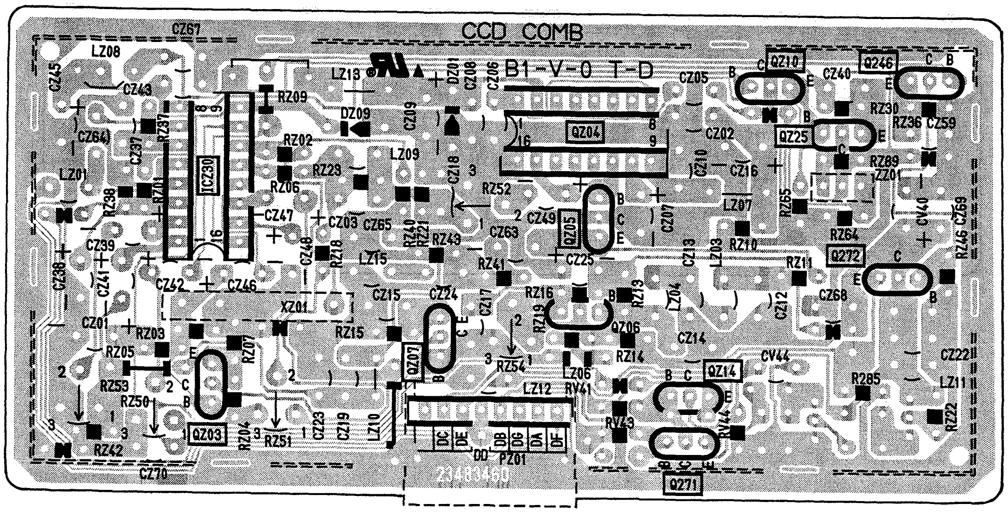
FRONT IN BOARD PB3470-2

BOTTOM (FOIL) SIDE


23483769
B1-V-0 T-D
CV47
LV47
CV48
PV60
34 35 36 37 38
39 40 41 42 43
RV89
RV88
RV90
PV40
23483769
TOSHIBA

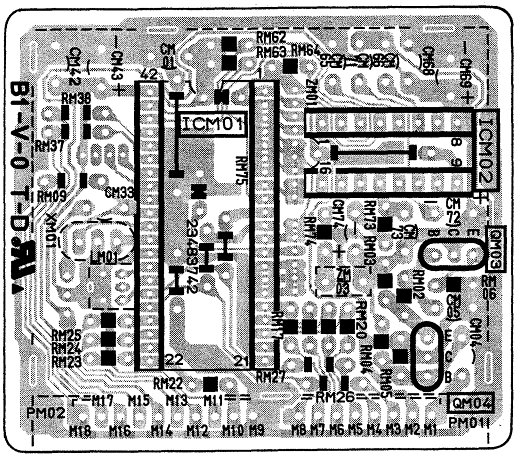
S-CCD BOARD PB3469

BOTTOM (FOIL) SIDE


CZ67
CCD COMB
LZ08
CZ45
CZ43
CZ64
CZ37
RZ37
RZ01
ICZ30
LZ13
RZ09
DZ01
CZ08
CZ06
B1-V-0 T-D
CZ05
QZ10
QZ46
CZ40
DZ09
RZ02
CZ09
QZ04
CZ02
QZ25
RZ30
RZ36
CZ59
LZ01
RZ38
RZ23
RZ06
LZ09
CZ18
RZ52
CZ10
CZ16
RZ89
ZZ01
CZ39
CZ47
CZ03
CZ65
CZ48
RZ18
RZ40
RZ21
RZ43
CZ63
CZ49
QZ05
CZ07
LZ07
RZ55
RZ64
CV40
CZ69
RZ46
CZ38
CZ41
CZ42
CZ46
LZ15
RZ41
CZ25
LZ03
RZ10
RZ11
QZ72
CZ13
CZ01
RZ03
XZ01
CZ15
CZ24
CZ17
RZ16
RZ19
RZ13
LZ04
QZ06
CZ12
CZ68
RZ05
RZ07
RZ15
QZ07
RZ54
LZ06
RZ14
CZ14
CV44
CZ22
RZ53
RZ50
LZ12
RV41
QZ14
R285
LZ11
RV43
RV44
RZ22
RZ42
QZ03
RZ04
RZ51
CZ23
CZ19
LZ10
DC DE DD DB DG DA DF
PZ01
CZ70
23483460
QZ71
B C E

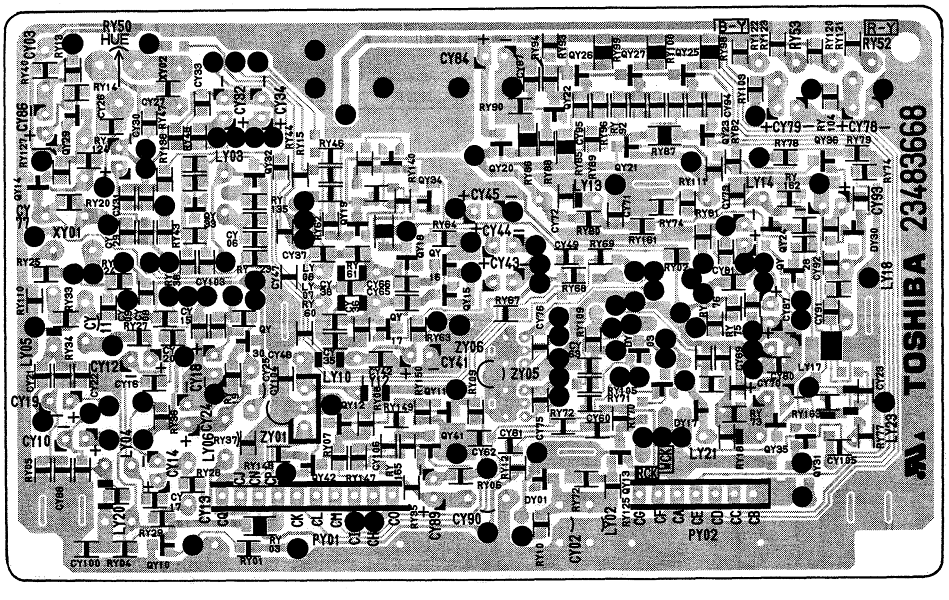
CLOSED CAPTION BOARD PB3375

BOTTOM (FOIL) SIDE


ICM01
ICM02
QM03
QM04
LM01
XM01
PM01
PM02
RM22
RM27
RM26
RM38
RM37
RM09
RM25
RM24
RM23
RM62
RM63
RM64
CM33
CM42
CM43
CM69
23483742
B1-V-0 T-D
M18 M16 M14 M12 M10 M9
M8 M7 M6 M5 M4 M3 M2 M1
M17 M15 M13 M11

PIP BOARD PB3377

BOTTOM (FOIL) SIDE


RY50
HUE
B-Y
R-Y
RY52
RY53
CY84
CY03
XY01
LY03
LY05
LY10
LY13
LY14
LY17
LY18
LY20
LY21
ZY01
ZY05
ZY06
PY01
PY02
CY90
CY89
CY45
CY44
CY43
CY79
CY78
CY93
TOSHIBA
23483668

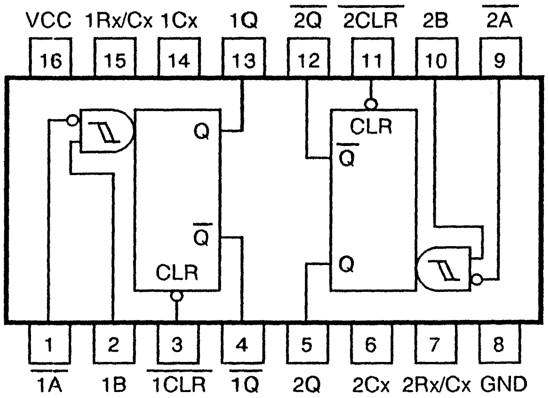
IC BLOCK DIAGRAM

IC305 TC74HC123AP

FUNCTION TABLE

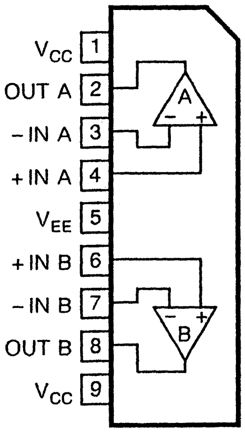
INPUTS			OUTPUTS	
$\overline{CLEAR}$	$\overline{A}$	B	Q	$\overline{Q}$
L	X	X	L	H
H	H	X	L	H
H	X	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔

X: DON'T CARE


VCC
1Rx/Cx
1Cx
1Q
$\overline{2Q}$
$\overline{2CLR}$
2B
$\overline{2A}$
16
15
14
13
12
11
10
9
Q
$\overline{Q}$
CLR
CLR
$\overline{Q}$
Q
1
2
3
4
5
6
7
8
$\overline{1A}$
1B
$\overline{1CLR}$
$\overline{1Q}$
2Q
2Cx
2Rx/Cx
GND

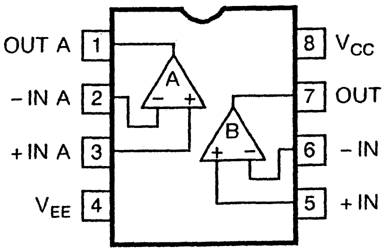
IC390 IC470 TA5558S

SIP-9

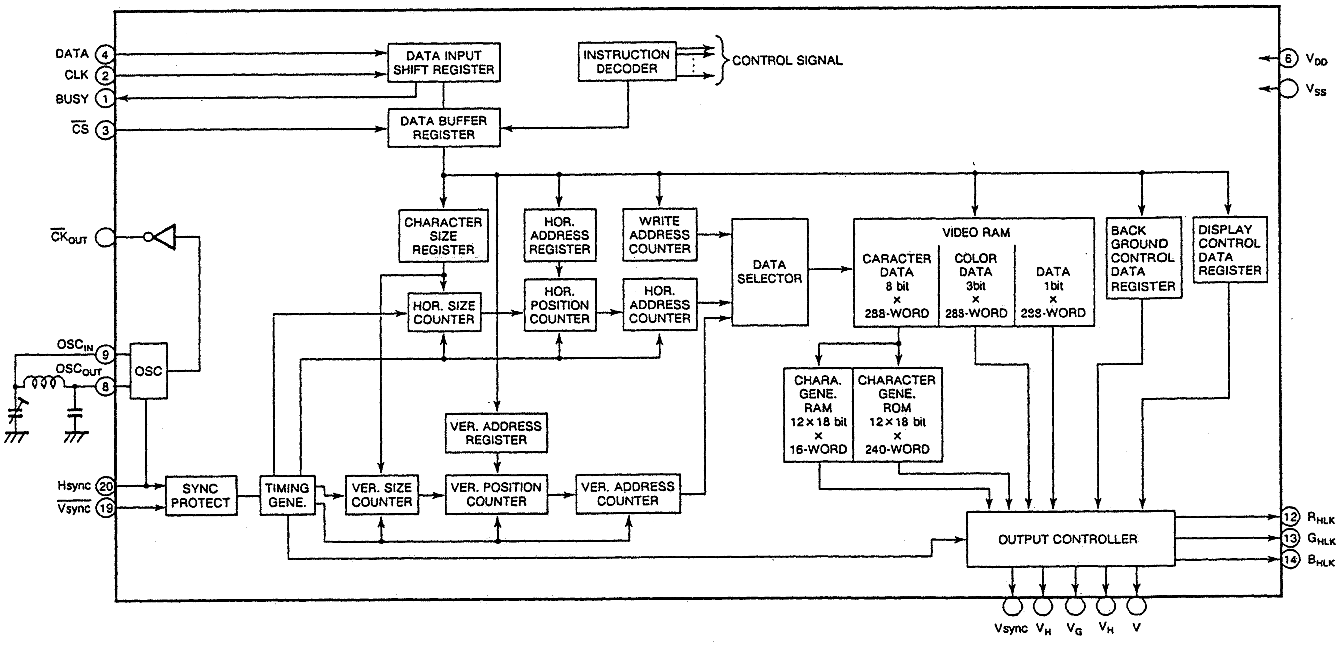

V_{CC} 1
OUT A 2
−IN A 3
+IN A 4
V_{EE} 5
+IN B 6
−IN B 7
OUT B 8
V_{CC} 9
A
B

IC412 TA75458P

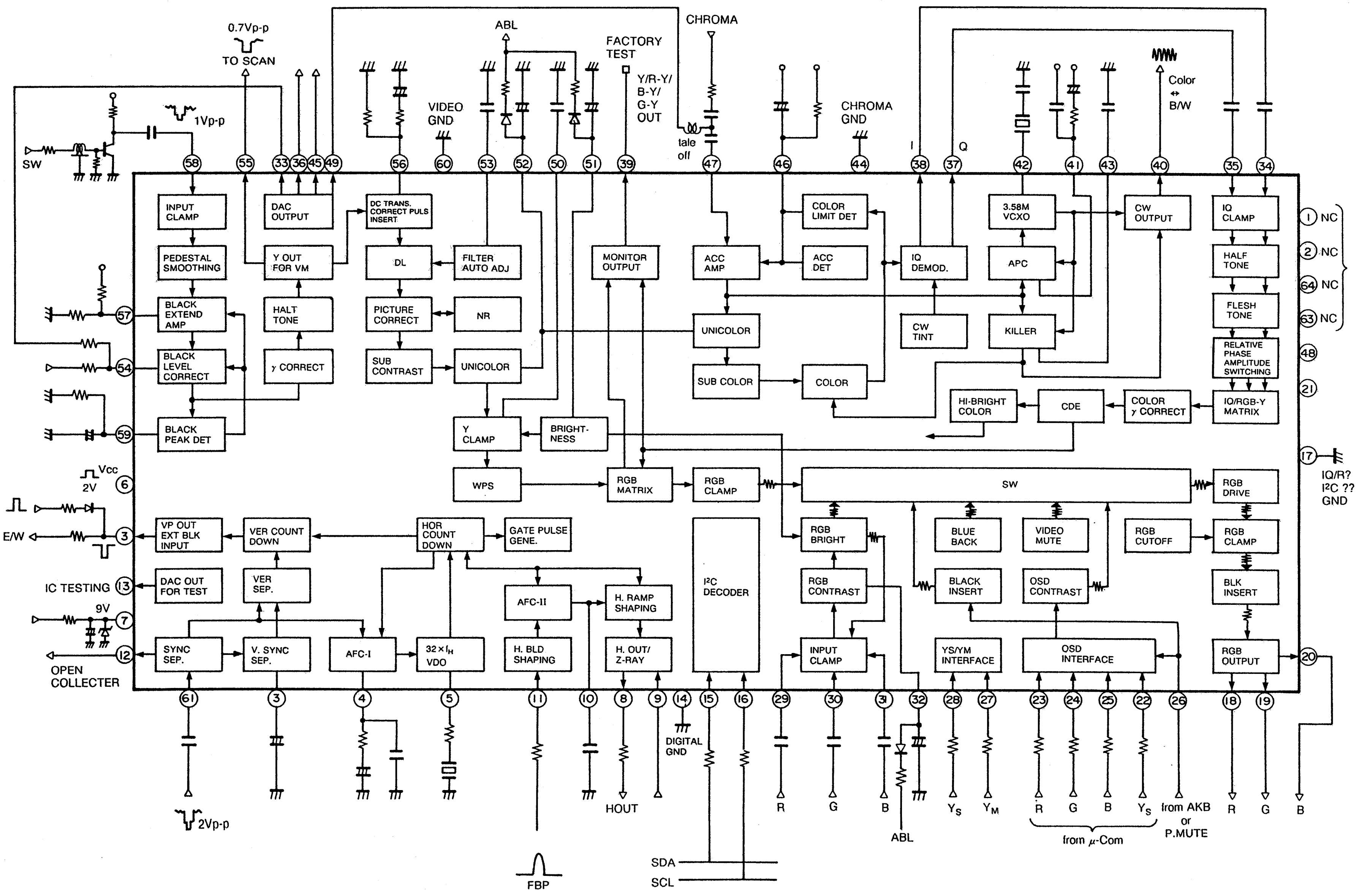
DIP-8


OUT A 1
−IN A 2
+IN A 3
V_{EE} 4
8 V_{CC}
7 OUT B
6 −IN B
5 +IN B
A
B

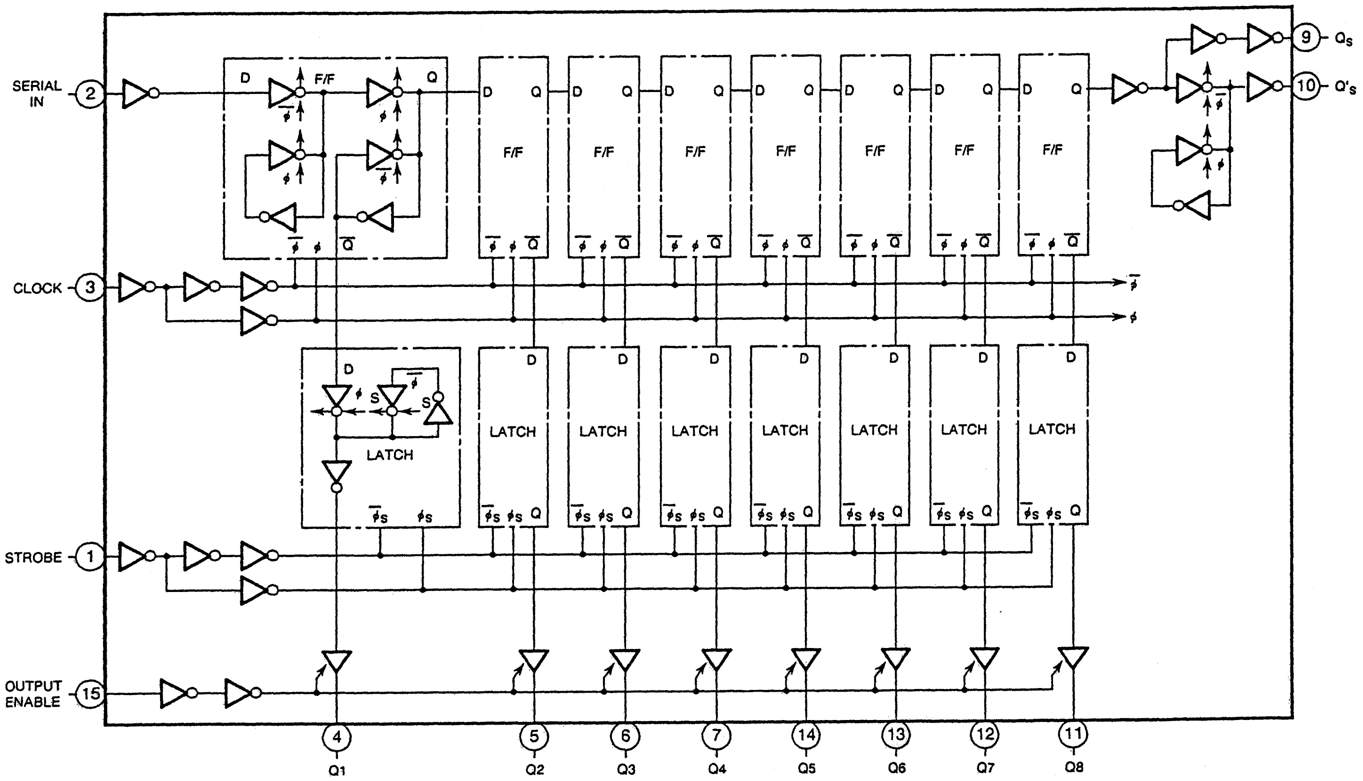
ICA03 μPD6453CY


DATA 4
CLK 2
BUSY 1
$\overline{CS}$ 3
$\overline{CK}_{OUT}$
OSC_{IN} 9
OSC_{OUT} 8
OSC
Hsync 20
$\overline{Vsync}$ 19
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
DATA BUFFER REGISTER
6 V_{DD}
V_{SS}
CHARACTER SIZE REGISTER
HOR. ADDRESS REGISTER
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CARACTER DATA 8 bit x 288-WORD
COLOR DATA 3bit x 288-WORD
DATA 1bit x 288-WORD
BACK GROUND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
HOR. SIZE COUNTER
HOR. POSITION COUNTER
HOR. ADDRESS COUNTER
CHARA. GENE. RAM 12×18 bit x 16-WORD
CHARACTER GENE. ROM 12×18 bit x 240-WORD
VER. ADDRESS REGISTER
SYNC PROTECT
TIMING GENE.
VER. SIZE COUNTER
VER. POSITION COUNTER
VER. ADDRESS COUNTER
OUTPUT CONTROLLER
12 R_{HLK}
13 G_{HLK}
14 B_{HLK}
Vsync
V_H
V_G
V_H
V

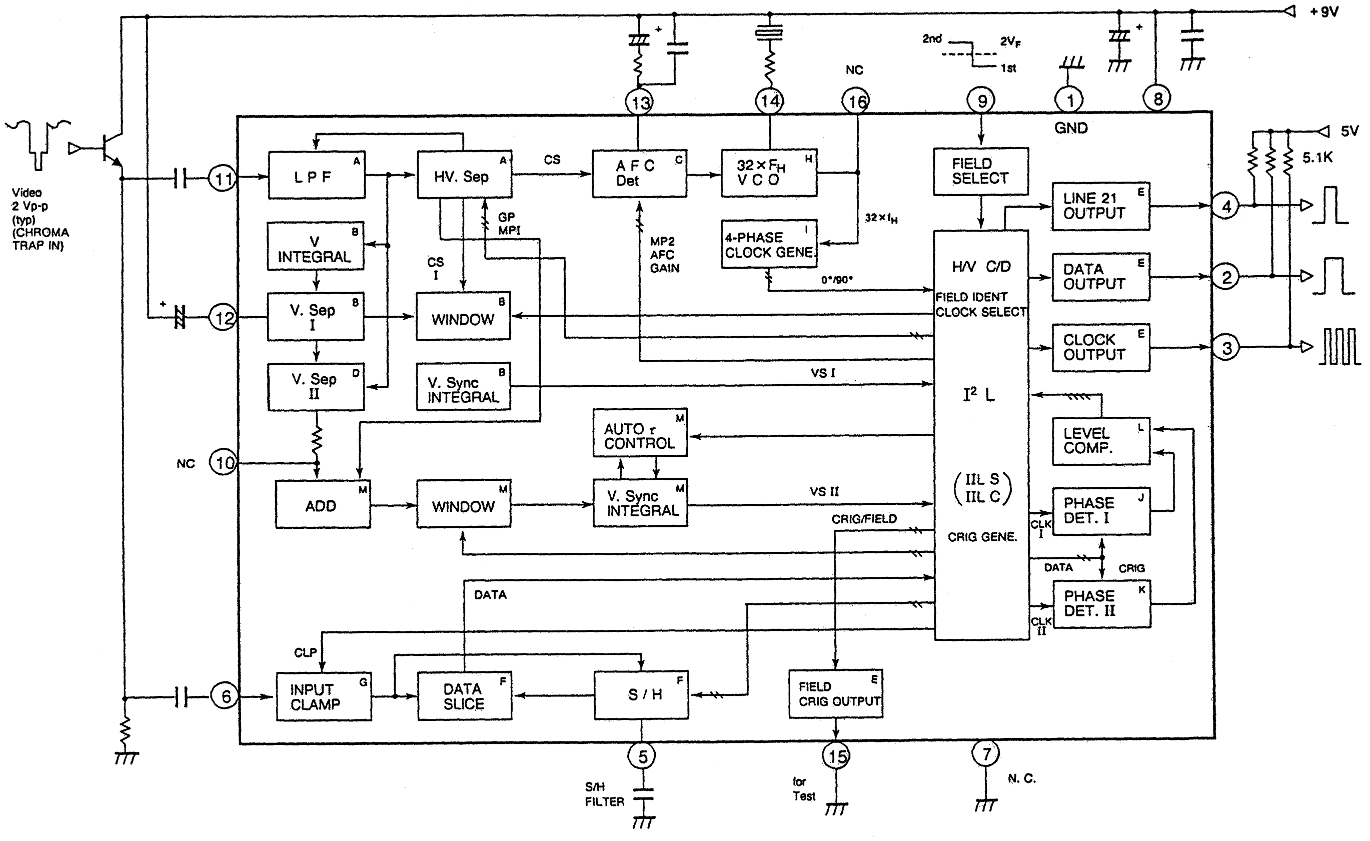
IC501 TA8845N


0.7Vp-p
TO SCAN
ABL
FACTORY TEST
Y/R-Y/ B-Y/ G-Y OUT
CHROMA
tale off
VIDEO GND
CHROMA GND
I
Q
Color ↔ B/W
1Vp-p
SW
INPUT CLAMP
PEDESTAL SMOOTHING
BLACK EXTEND AMP
BLACK LEVEL CORRECT
BLACK PEAK DET
DAC OUTPUT
Y OUT FOR VM
HALT TONE
γ CORRECT
DC TRANS. CORRECT PULS INSERT
DL
PICTURE CORRECT
SUB CONTRAST
FILTER AUTO ADJ
NR
UNICOLOR
Y CLAMP
BRIGHT-NESS
WPS
MONITOR OUTPUT
RGB MATRIX
RGB CLAMP
ACC AMP
ACC DET
COLOR LIMIT DET
UNICOLOR
SUB COLOR
COLOR
IQ DEMOD.
CW TINT
3.58M VCXO
APC
KILLER
CW OUTPUT
HI-BRIGHT COLOR
CDE
COLOR γ CORRECT
IQ CLAMP
HALF TONE
FLESH TONE
RELATIVE PHASE AMPLITUDE SWITCHING
IO/RGB-Y MATRIX
SW
RGB DRIVE
RGB CLAMP
BLK INSERT
RGB OUTPUT
RGB CUTOFF
RGB BRIGHT
RGB CONTRAST
INPUT CLAMP
BLUE BACK
VIDEO MUTE
BLACK INSERT
OSD CONTRAST
YS/YM INTERFACE
OSD INTERFACE
I²C DECODER
VP OUT EXT BLK INPUT
VER COUNT DOWN
HOR COUNT DOWN
GATE PULSE GENE.
DAC OUT FOR TEST
VER SEP.
AFC-II
H. RAMP SHAPING
SYNC SEP.
V. SYNC SEP.
AFC-I
32×f_H VDO
H. BLD SHAPING
H. OUT/ Z-RAY
Vcc 2V
E/W
IC TESTING
9V
OPEN COLLECTER
2Vp-p
DIGITAL GND
HOUT
FBP
SDA
SCL
R
G
B
ABL
Y_S
Y_M
R
G
B
Y_S
from μ-Com
from AKB or P.MUTE
R
G
B
NC
NC
NC
NC
IQ/R? I²C ?? GND
1
2
64
63
48
21
17
20
58
55
33
36
45
49
56
60
53
52
50
51
39
47
46
44
38
37
42
41
43
40
35
34
57
54
59
6
3
13
7
12
61
3
4
5
11
10
8
9
14
15
16
29
30
31
32
28
27
23
24
25
22
26
18
19

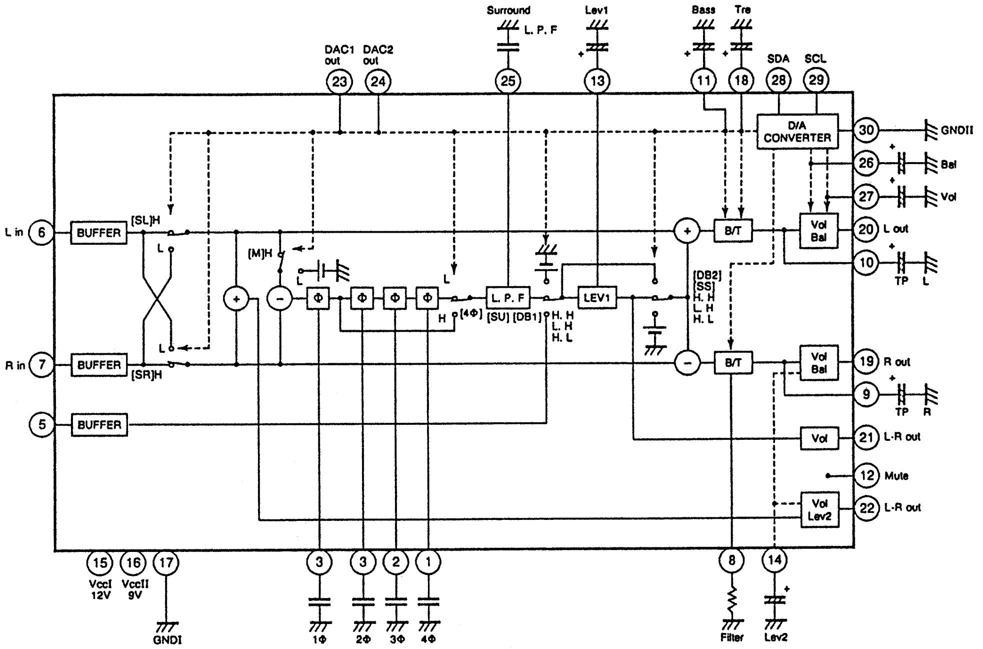
ICA05 TC74HC4094AP


SERIAL IN
2
CLOCK
3
STROBE
1
OUTPUT ENABLE
15
D
F/F
Q
LATCH
9
Qs
10
Q's
4
Q1
5
Q2
6
Q3
7
Q4
14
Q5
13
Q6
12
Q7
11
Q8

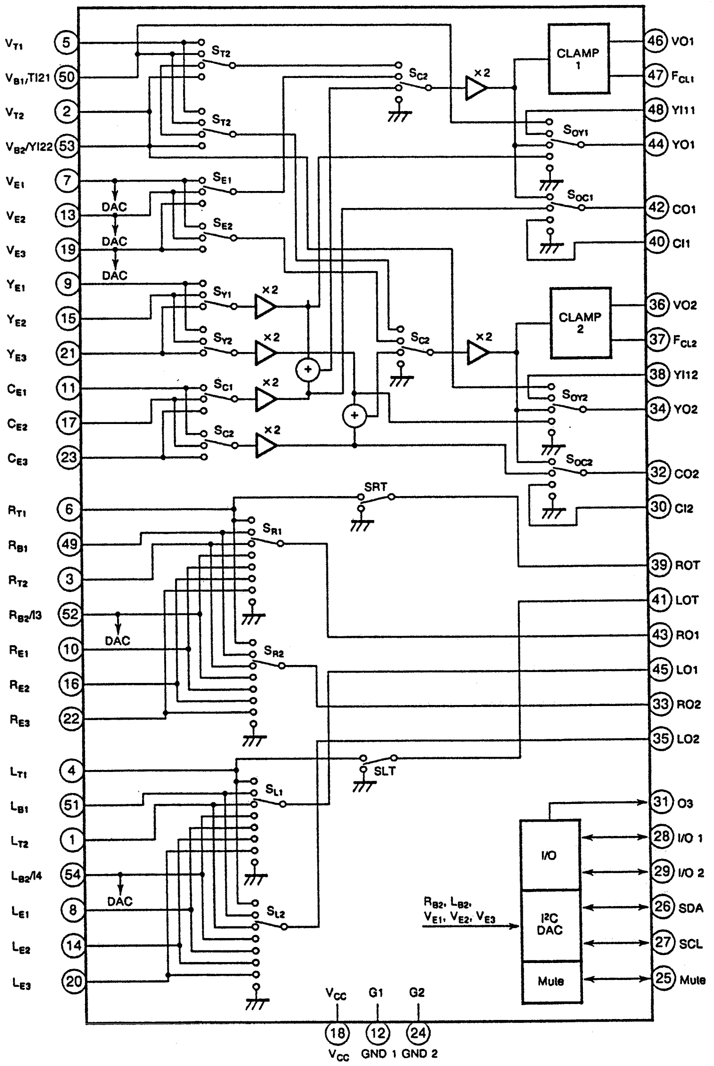
ICM02 TA8862P


+9V
5V
5.1K
Video
2 Vp-p
(typ)
(CHROMA
TRAP IN)
11
12
10
NC
6
13
14
16
NC
9
1
8
GND
2nd
2VF
1st
LPF
HV. Sep
CS
AFC Det
32×FH VCO
32×fH
4-PHASE CLOCK GENE.
0°/90°
GP
MPI
MP2
AFC
GAIN
V INTEGRAL
V. Sep I
V. Sep II
CS
I
WINDOW
V. Sync INTEGRAL
VS I
FIELD SELECT
H/V C/D
FIELD IDENT
CLOCK SELECT
I² L
(IIL S
IIL C)
CRIG GENE.
LINE 21 OUTPUT
DATA OUTPUT
CLOCK OUTPUT
LEVEL COMP.
PHASE DET. I
PHASE DET. II
CLK I
CLK II
DATA
CRIG
4
2
3
AUTO τ CONTROL
ADD
WINDOW
V. Sync INTEGRAL
VS II
CRIG/FIELD
DATA
CLP
INPUT CLAMP
DATA SLICE
S / H
FIELD CRIG OUTPUT
5
S/H FILTER
15
for Test
7
N. C.

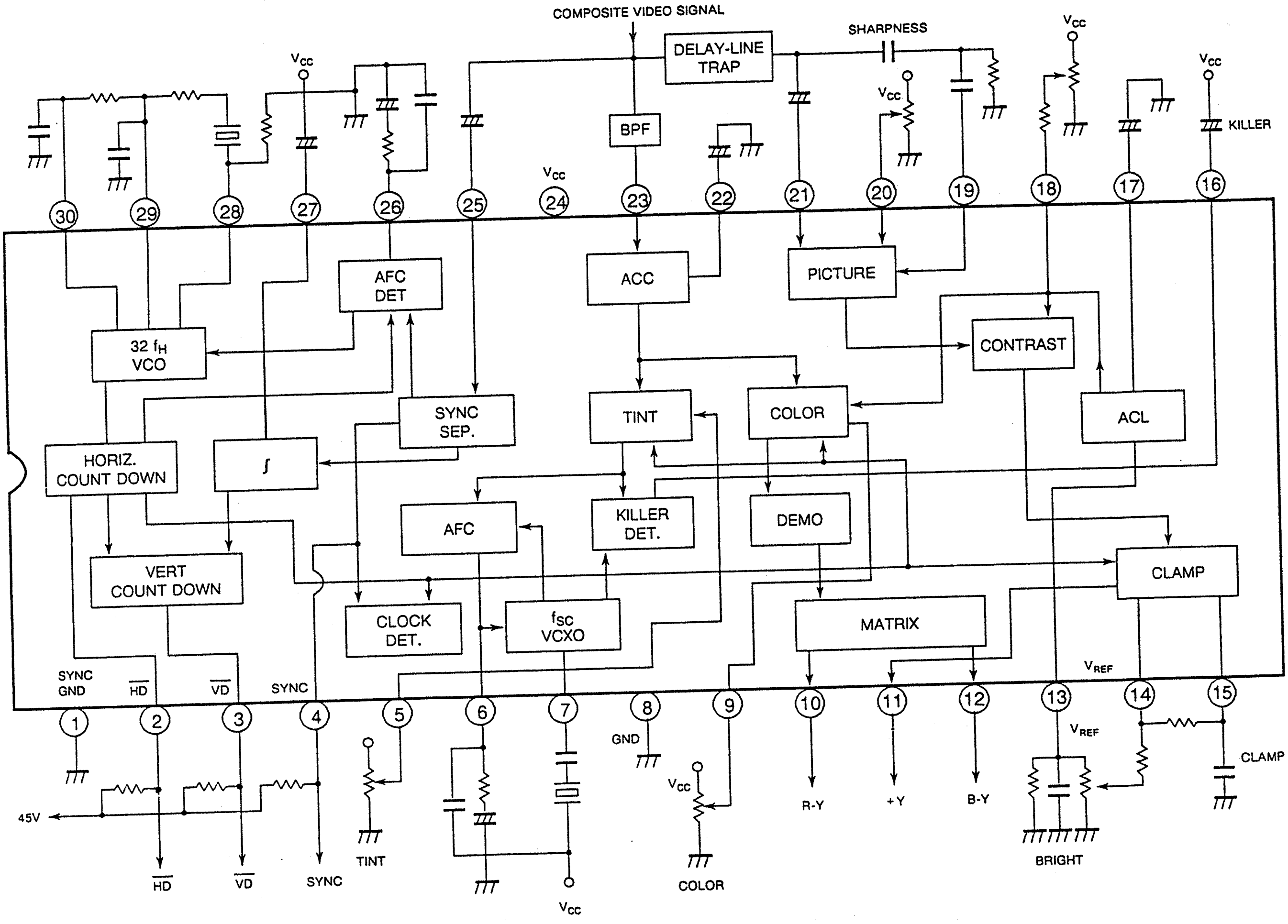
ICN06 TA8776N


Surround
L. P. F
Lev1
Bass
Tre
DAC1 out
DAC2 out
SDA
SCL
23
24
25
13
11
18
28
29
D/A CONVERTER
30
GNDII
26
Bal
27
Vol
L in
6
BUFFER
[SL]H
L
[M]H
L
Φ
Φ
Φ
Φ
L. P. F
LEV1
B/T
Vol Bal
20
L out
10
TP
L
H
[4Φ]
[SU]
[DB1]
H. H
L. H
H. L
[DB2]
[SS]
H. H
L. H
H. L
R in
7
BUFFER
[SR]H
L
B/T
Vol Bal
19
R out
9
TP
R
5
BUFFER
Vol
21
L-R out
12
Mute
Vol Lev2
22
L-R out
15
16
17
VccI 12V
VccII 9V
GNDI
3
3
2
1
1Φ
2Φ
3Φ
4Φ
8
14
Filter
Lev2

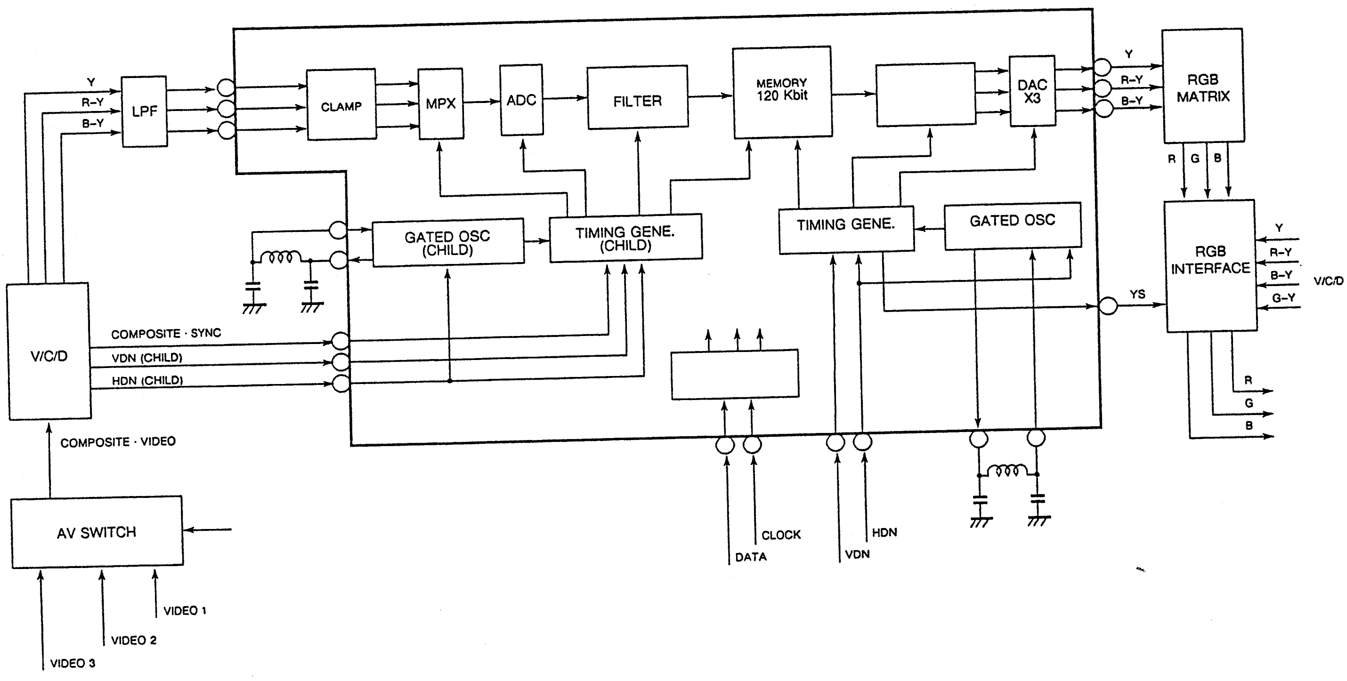
ICV01 TA8851AN


VT1
5
VB1/TI21
50
VT2
2
VB2/YI22
53
VE1
7
VE2
13
VE3
19
YE1
9
YE2
15
YE3
21
CE1
11
CE2
17
CE3
23
DAC
DAC
DAC
ST2
ST2
SE1
SE2
SY1
SY2
SC1
SC2
SC2
SC2
×2
×2
×2
×2
×2
×2
CLAMP 1
CLAMP 2
SOY1
SOC1
SOY2
SOC2
46
VO1
47
FCL1
48
YI11
44
YO1
42
CO1
40
CI1
36
VO2
37
FCL2
38
YI12
34
YO2
32
CO2
30
CI2
RT1
6
RB1
49
RT2
3
RB2/I3
52
RE1
10
RE2
16
RE3
22
DAC
SRT
SR1
SR2
39
ROT
41
LOT
43
RO1
45
LO1
33
RO2
35
LO2
LT1
4
LB1
51
LT2
1
LB2/I4
54
LE1
8
LE2
14
LE3
20
DAC
SLT
SL1
SL2
RB2, LB2, VE1, VE2, VE3
I/O
I2C DAC
Mute
31
O3
28
I/O 1
29
I/O 2
26
SDA
27
SCL
25
Mute
VCC
G1
G2
18
12
24
VCC
GND 1
GND 2

ICY01 TA8779F

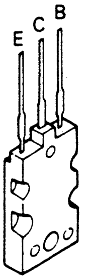

COMPOSITE VIDEO SIGNAL
DELAY-LINE TRAP
SHARPNESS
BPF
KILLER
Vcc
AFC DET
32 fH VCO
SYNC SEP.
HORIZ. COUNT DOWN
∫
VERT COUNT DOWN
ACC
TINT
COLOR
PICTURE
CONTRAST
ACL
AFC
KILLER DET.
DEMO
CLOCK DET.
fsc VCXO
MATRIX
CLAMP
VREF
SYNC GND
HD
VD
SYNC
GND
45V
TINT
COLOR
R-Y
+Y
B-Y
BRIGHT
CLAMP
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

ICY03 TC9067F

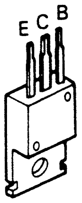

Y
R-Y
B-Y
LPF
CLAMP
MPX
ADC
FILTER
MEMORY 120 Kbit
DAC X3
RGB MATRIX
R
G
B
GATED OSC (CHILD)
TIMING GENE. (CHILD)
TIMING GENE.
GATED OSC
RGB INTERFACE
G-Y
V/C/D
YS
V/C/D
COMPOSITE · SYNC
VDN (CHILD)
HDN (CHILD)
COMPOSITE · VIDEO
AV SWITCH
VIDEO 1
VIDEO 2
VIDEO 3
CLOCK
DATA
HDN
VDN

TERMINAL VIEW OF TRANSISTORS

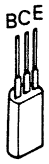
① 2SD1427



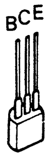
② 28B595
2SB834
2SD1052A
2SC1569
2SC2383
2SC2553
2SD525
2SD880



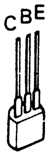
③ 2SA949
2SA1020
2SC752GTM
2SC2230A
2SC2229
2SC2482
2SC2655



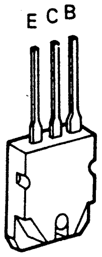
④ 2SA562TM
2SA1015
2SA817
2SC1815
2SC1959
2SC2878
2SC388ATM



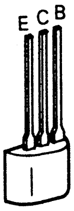
⑤ 2SA1026



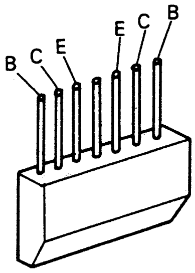
⑥ 2SD1092
2SD1294



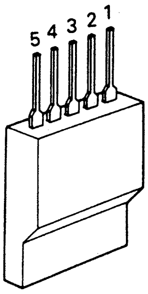
⑦ RN1001
RN1003
RN1004
RN2005
RN1201
RN1202
RN1203
RN1204



⑧ 2SA1349
2SC3381



⑨ D1005T



MEMO

MEMO

2421

SERVICE DATA
FILE NO. 053-638
SUPPLEMENT

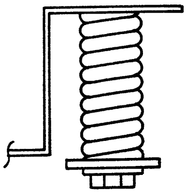
TOSHIBA

PROJECTION TELEVISION

TP48C50:TP48C51:PJ48C50

(TAC9390) (TAC9390) (TAC9390)

This supplement covers the corrections of the errata in the original service data (File No. 050-638).

Page	From	To
15	Error of the Part Numbers of the Service kits. R : KIT SERVICE (R) 23305477 G : KIT SERVICE (G) 23305478 B : KIT SERVICE (B) 23305479	R : KIT SERVICE (R) 23305447 G : KIT SERVICE (G) 23305448 B : KIT SERVICE (B) 23305455
16	Error of the CAUTION label. **CAUTION:** **RED SEALED SCREWS** **ARE NOT FOR** **CRT ADJUSTMENT**	**Attention Serviceman**  The Hex Head Bolts with Springs, (see sketch) used on CRT assembly, are "NOT" Adjustment Screws DO NOT LOOSEN - FLUID LEAKAGE WILL OCCUR.

Printed in Japan Oct. 1993 So

SERVICE DATA
FILE NO. 054-638
SUPPLEMENT

242,

TOSHIBA

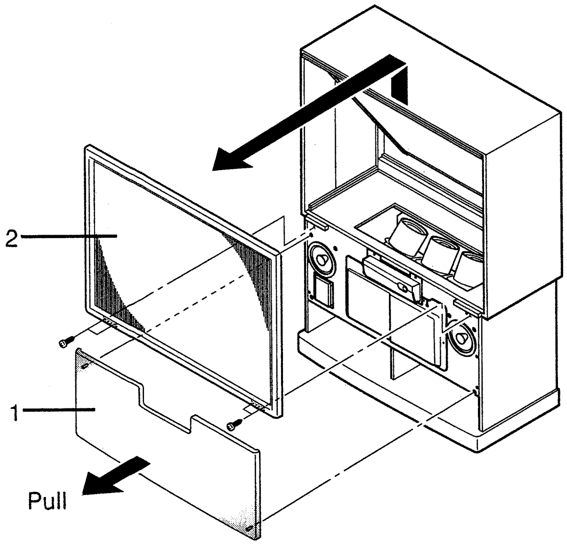
PROJECTION TELEVISION

TP48C50, TP48C51, PJ48C50
TP48C70, TP48C71
TP48C90, PJ48C90
TP55C80, TP55C81, PJ55C80

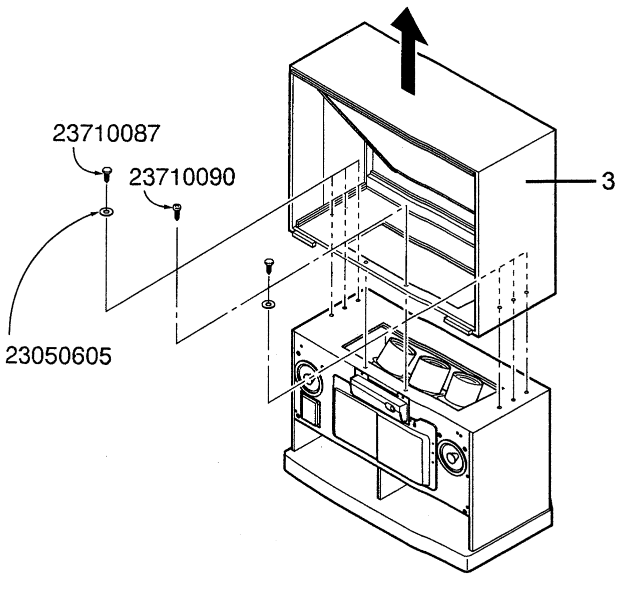
This supplement covers the additional information for the "MECHANICAL DISASSEMBLY" section.

UPPER CABINET REMOVAL

1 Remove the Speaker Grille.
2 Remove the Front Mask (4 screws).



3 Remove the Upper Cabient (8 screws).

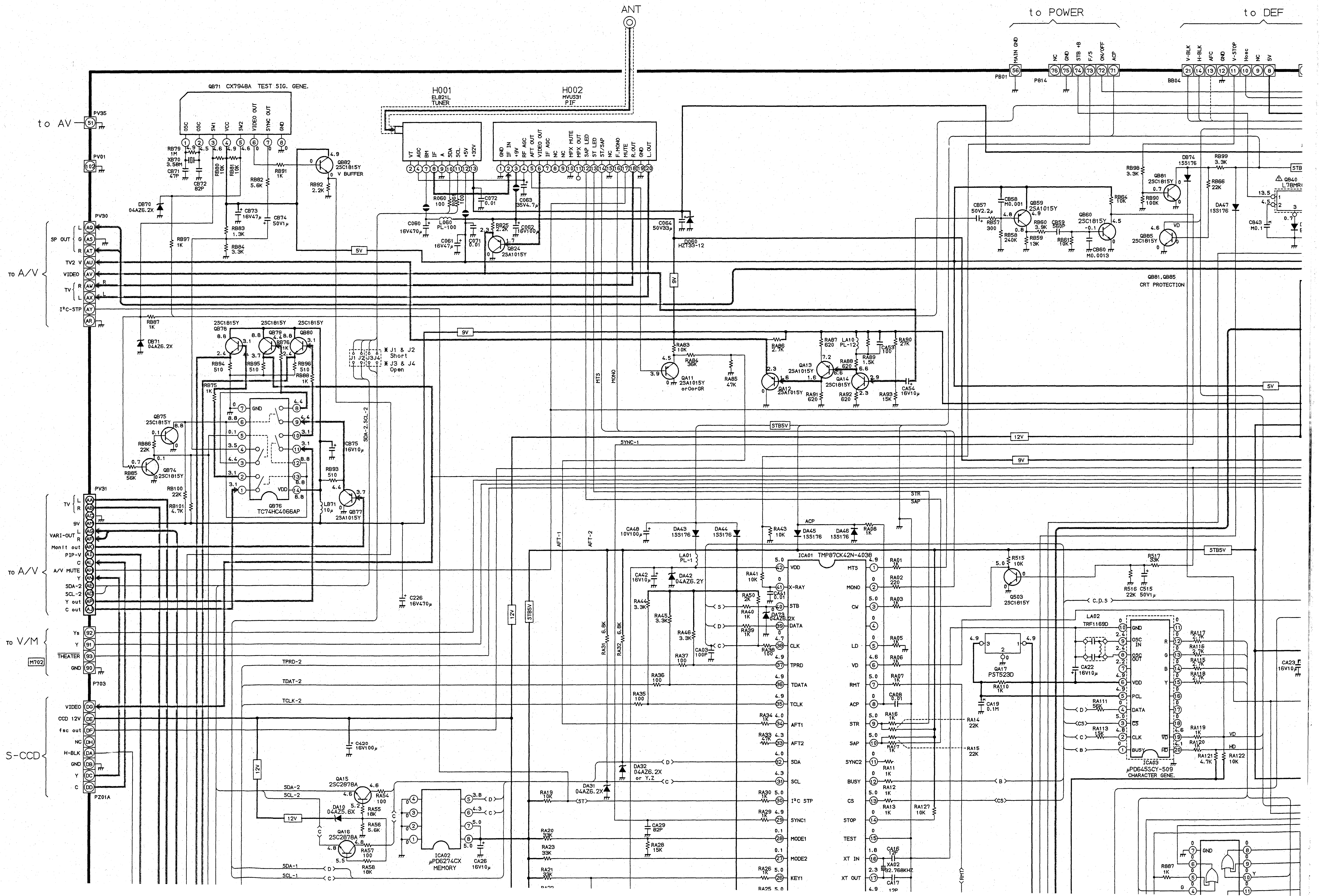


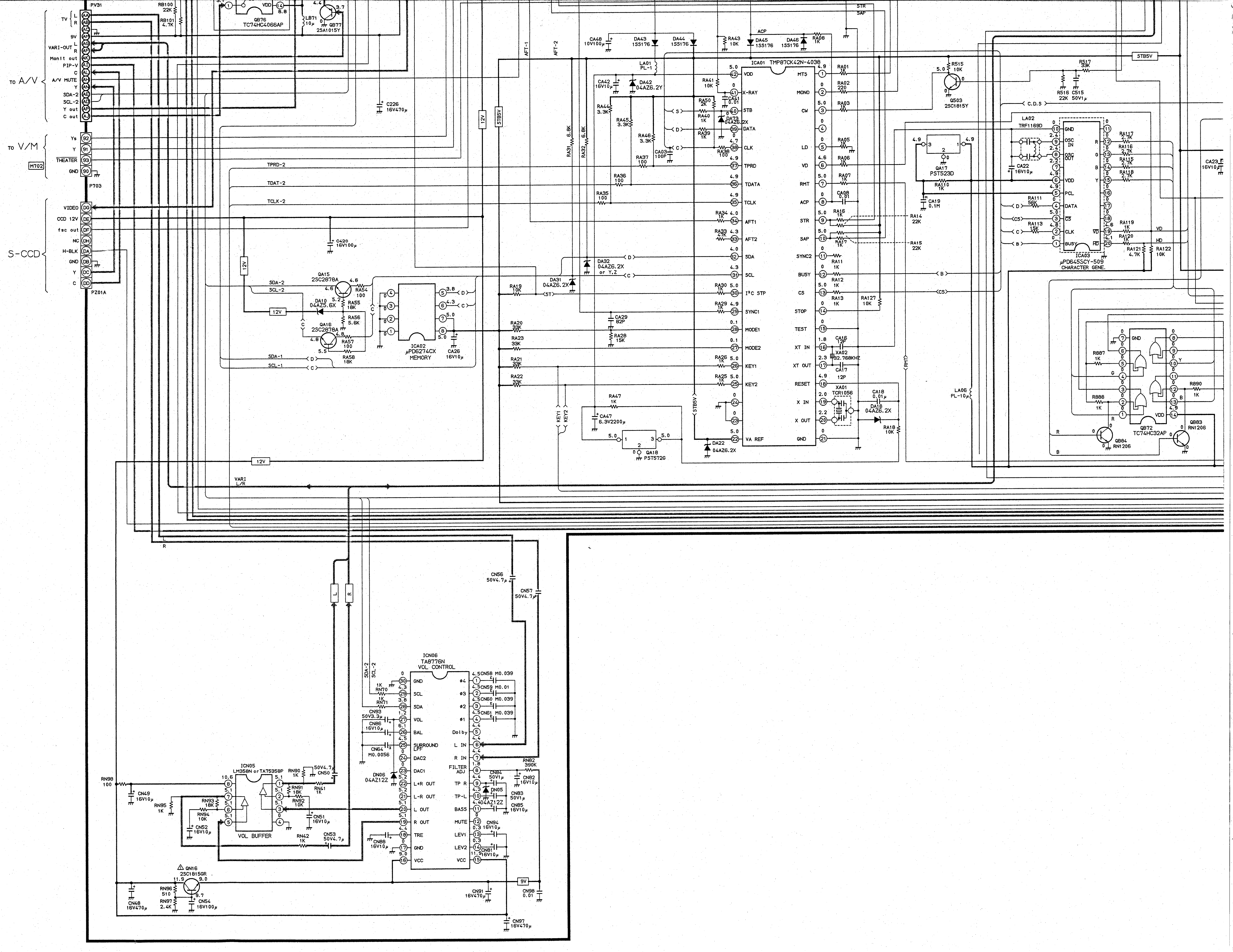
The illustration represents TP48C90.

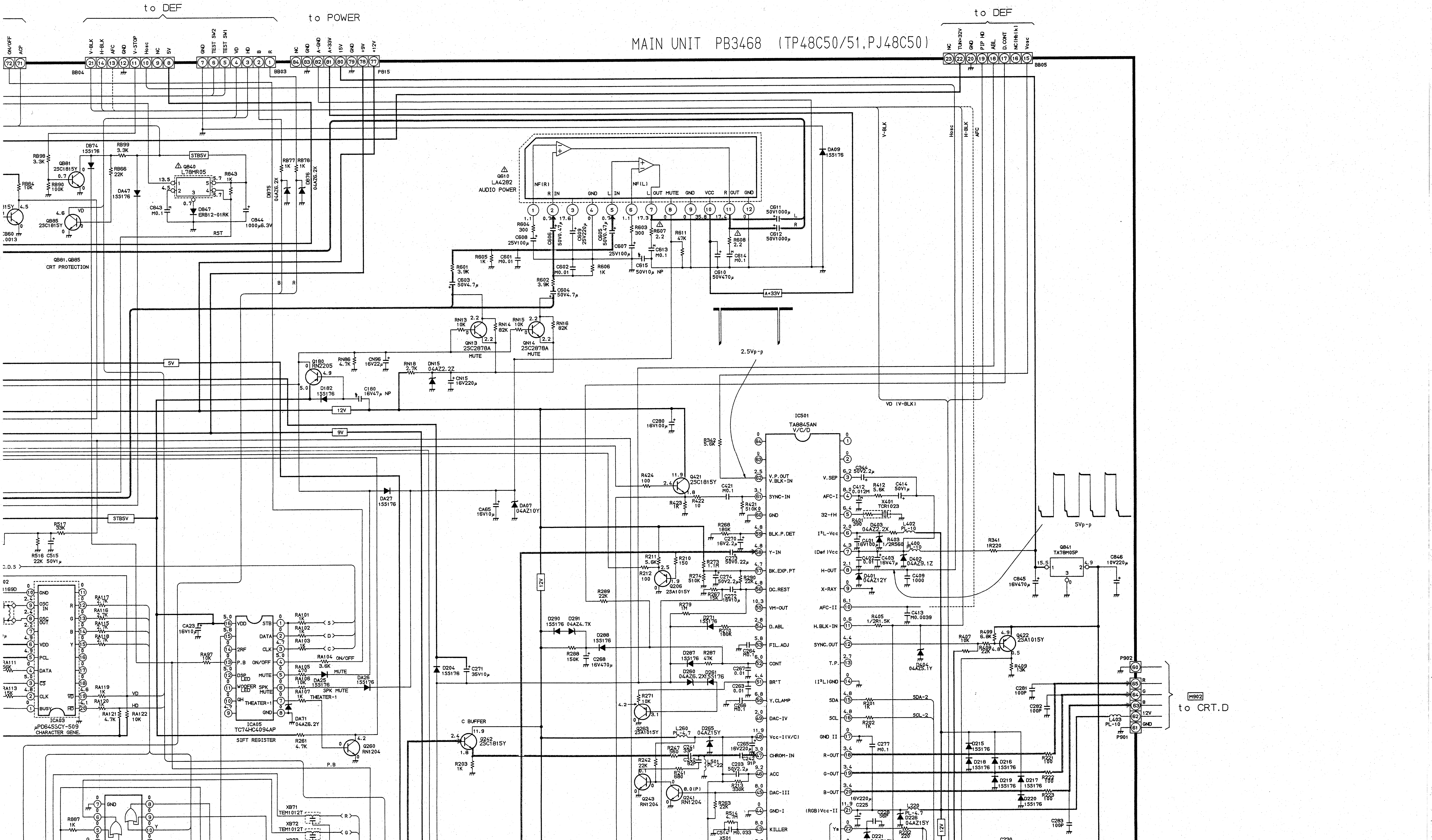
Printed in Japan Dec. 1993 (So)

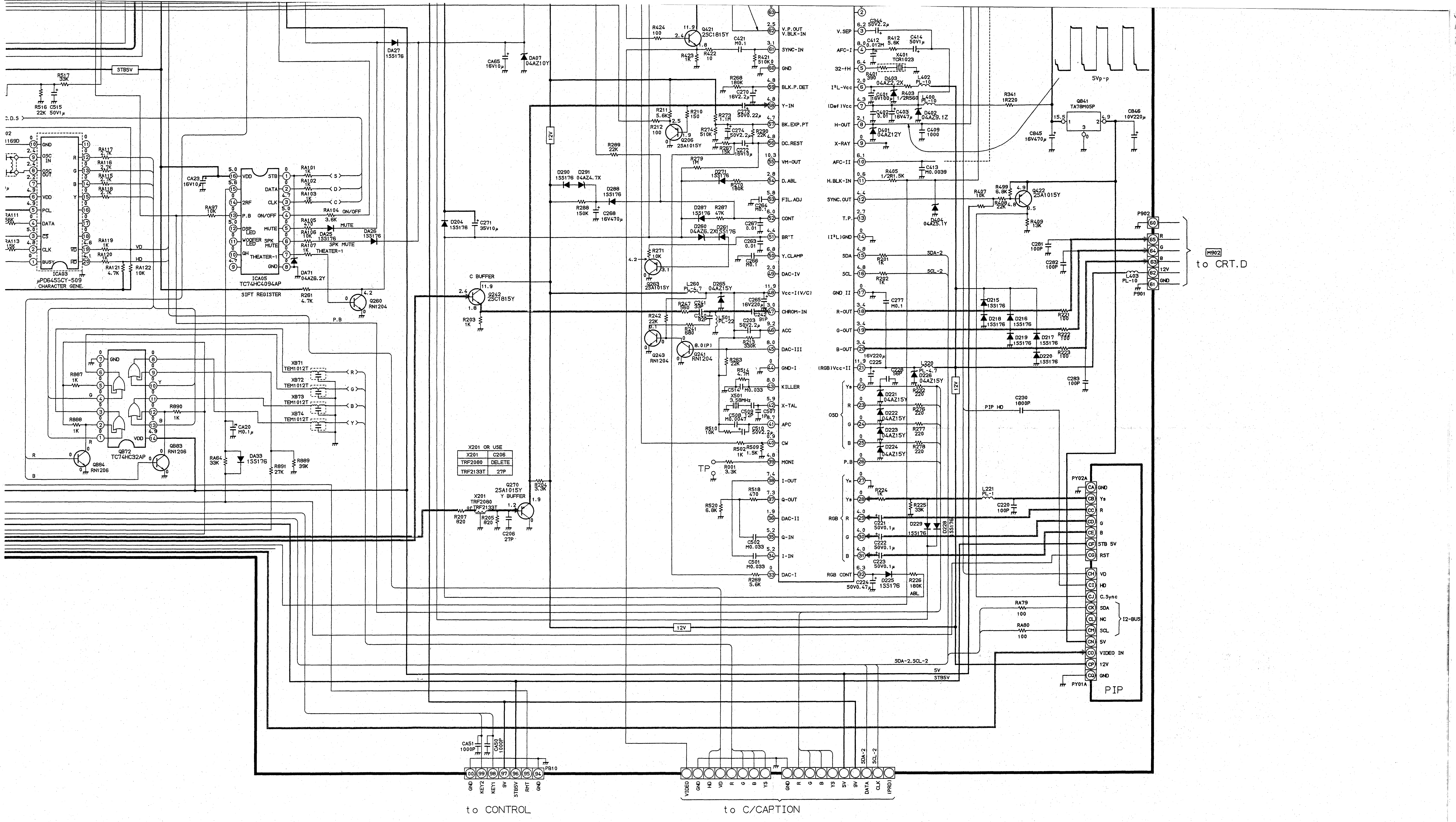
SCHEMATIC DIAGRAM

MODELS: **TP48C50** Chassis No. TAC9390
TP48C51 Chassis No. TAC9390


ANT
to POWER
to DEF
to AV
to A/V
to V/M
S-CCD
M702
QB71 CX7948A TEST SIG. GENE.
H001 EL821L TUNER
H002 MVUS31 PIF
QB76 TC74HC4066AP
QB81,QB85 CRT PROTECTION
ICA01 TMP87CK42N-4038
ICA02 μPD6274CX MEMORY
ICA03 μPD6455CY-509 CHARACTER GENE.
QA17 PST523D
※J1 & J2 Short
※J3 & J4 Open
PV35
PV01
PV30
PV31
P703
PZ01A
PB01
P814
BB04
5V
9V
12V
STB5V


TO A/V
TO V/M
M702
S-CCD
PV31
P703
PZ01A
TV
9V
VARI-OUT
Monit out
PIP-V
A/V MUTE
SDA-2
SCL-2
Y out
C out
THEATER
GND
VIDEO
CCD 12V
fsc out
NC
H-BLK
QB76 TC74HC4066AP
QB77 2SA1015Y
LB71 10μ
RB100 22K
RB101 4.7K
C226 16V470μ
AFT-1
AFT-2
12V
STB5V
TPRD-2
TDAT-2
TCLK-2
C420 16V100μ
QA15 2SC2878A
QA16 2SC2878A
DA10 04AZ5.6X
RA54 100
RA55 18K
RA56 5.6K
RA57 100
RA58 18K
ICA02 μPD6274CX MEMORY
CA26 16V10μ
SDA-1
SCL-1
ICA01 TMP87CK42N-4038
VDD
X-RAY
STB
DATA
CLK
TPRD
TDATA
TCLK
AFT1
AFT2
SDA
SCL
I²C STP
SYNC1
MODE1
MODE2
KEY1
KEY2
VA REF
MTS
MONO
CW
LD
VD
RMT
ACP
STR
SAP
SYNC2
BUSY
CS
STOP
TEST
XT IN
XT OUT
RESET
X IN
X OUT
GND
DA43 1SS176
DA44 1SS176
DA45 1SS176
DA46 1SS176
CA48 10V100μ
CA42 16V10μ
DA42 04AZ6.2Y
LA01 PL-1
DA32 04AZ6.2X or Y,Z
DA31 04AZ6.2X
DA22 04AZ6.2X
CA47 6.3V2200μ
QA18 PST572G
XA02 32.768KHZ
XA01 TCR1056
DA18 04AZ6.2X
Q503 2SC1815Y
R515 10K
R516 22K
C515 50V1μ
R517 33K
STB5V
C.D.S
LA02 TRF1169D
QA17 PST523D
CA19 0.1M
CA22 16V10μ
ICA03 μPD6455CY-509 CHARACTER GENE.
OSC IN
OSC OUT
PCL
DATA
CLK
BUSY
VD
HD
RA121 4.7K
RA122 10K
LA06 PL-10μ
QB72 TC74HC32AP
QB83 RN1206
QB84 RN1206
R887 1K
R888 1K
R890 1K
CA23 16V10μ
KEY1
KEY2
VARI L/R
L
R
CN56 50V4.7μ
CN57 50V4.7μ
ICN06 TA8776N VOL. CONTROL
SCL
SDA
VOL
BAL
SURROUND LPF
DAC2
DAC1
L+R OUT
L-R OUT
L OUT
R OUT
TRE
VCC
Dolby
L IN
R IN
FILTER ADJ
TP R
TP-L
BASS
MUTE
LEV1
LEV2
CN58 M0.039
CN59 M0.01
CN60 M0.039
CN61 M0.039
CN93 50V3.3μ
CN86 16V10μ
CN64 M0.0056
DN06 04AZ12Z
DN05 04AZ12Z
CN82 16V10μ
RN82 390K
CN84 50V1μ
CN83 50V1μ
CN85 16V10μ
CN94 16V10μ
CN81 16V10μ
CN88 16V10μ
ICN05 LM358N or TA75358P VOL BUFFER
RN98 100
CN49 16V10μ
RN95 1K
RN93 18K
RN94 10K
CN52 16V10μ
RN90 1K
RN91 18K
RN92 10K
RN41 1K
CN50 50V4.7μ
CN51 16V10μ
RN42 1K
CN53 50V4.7μ
QN16 2SC1815GR
RN96 510
RN97 2.4K
CN48 16V470μ
CN54 16V100μ
CN91 16V470μ
CN98 0.01
CN97 16V470μ
9V


to DEF
to POWER
to DEF
MAIN UNIT PB3468 (TP48C50/51,PJ48C50)
BB04
BB03
PB15
BB05
V-BLK
H-BLK
AFC
GND
V-STOP
Hosc
NC
5V
TEST SW2
TEST SW1
VD
HD
B
R
A-GND
A+33V
15V
+9V
+12V
TUN+32V
PIP HD
ABL
D.CONT
NC(Hblk)
Vosc
Q610
LA4282
AUDIO POWER
NF(R)
R IN
L IN
NF(L)
L OUT
MUTE
VCC
R OUT
Q840
L78MR05
STB5V
QB81,QB85
CRT PROTECTION
QN13
2SC2878A
MUTE
QN14
2SC2878A
MUTE
Q180
RN2205
5V
12V
9V
A+33V
2.5Vp-p
5Vp-p
IC501
TA8845AN
V/C/D
V.P.OUT
V.BLK-IN
SYNC-IN
GND
BLK.P.DET
Y-IN
BK.EXP.PT
DC.REST
VM-OUT
D.ABL
FIL.ADJ
CONT
BR'T
Y.CLAMP
DAC-IV
Vcc-I(V/C)
CHROM-IN
ACC
DAC-III
GND-I
KILLER
V.SEP
AFC-I
32-FH
(I²L)-Vcc
(Def)Vcc
H-OUT
X-RAY
AFC-II
H.BLK-IN
SYNC.OUT
T.P.
(I²L)GND
SDA
SCL
GND II
R-OUT
G-OUT
B-OUT
(RGB)Vcc-II
Q421
2SC1815Y
Q422
2SA1015Y
Q841
TA78M05P
VD (V-BLK)
C BUFFER
Q242
2SC1815Y
Q260
RN1204
Q263
2SA1015Y
Q243
RN1204
Q241
RN1204
Q206
2SA1015Y
ICA03
µPD6455CY-509
CHARACTER GENE.
ICA05
TC74HC4094AP
SIFT REGISTER
STB
DATA
CLK
P.B
ON/OFF
MUTE
SPK MUTE
THEATER-1
WOOFER
P902
P901
M902
to CRT.D
SDA-2
SCL-2
12V
GND


μPD6455CY-509
CHARACTER GENE.
ICA03
TC74HC4094AP
ICA05
SIFT REGISTER
TC74HC32AP
Q872
Q883 RN1206
Q884 RN1206
Q260 RN1204
X871 TEM1012T
X872 TEM1012T
X873 TEM1012T
X874 TEM1012T
C BUFFER
Q242 2SC1815Y
Q270 2SA1015Y Y BUFFER
X201 OR USE
X201 C206
TRF2080 DELETE
TRF2133T 27P
Q421 2SC1815Y
Q206 2SA1015Y
Q263 2SA1015Y
Q243 RN1204
Q241 RN1204
Q422 2SA1015Y
Q841 TA78M05P
5Vp-p
V.P.OUT V.BLK-IN
SYNC-IN
GND
BLK.P.DET
Y-IN
BK.EXP.PT
DC.REST
VM-OUT
D.ABL
FIL.ADJ
CONT
BR'T
Y.CLAMP
DAC-IV
Vcc-I(V/C)
CHROM-IN
ACC
DAC-III
GND-I
KILLER
X-TAL
APC
CW
MONI
I-OUT
Q-OUT
DAC-II
Q-IN
I-IN
DAC-I
V.SEP
AFC-I
32-fH
I²L-Vcc
(Def)Vcc
H-OUT
X-RAY
AFC-II
H.BLK-IN
SYNC.OUT
T.P.
(I²L)GND
SDA
SCL
GND II
R-OUT
G-OUT
B-OUT
(RGB)Vcc-II
OSD
P.B
RGB
RGB CONT
ABL
TP
12V
STB5V
P902
M902
to CRT.D
P901
PY02A
PY01A
PIP
GND
Ys
R
G
B
STB 5V
RST
VD
HD
C.Sync
SDA
NC
SCL
5V
VIDEO IN
12V
GND
I2-BUS
SDA-2.SCL-2
5V
STB5V
PB10
GND KEY2 KEY1 9V STB5V RMT GND
to CONTROL
VIDEO GND HD VD R G B YS GND R G B YS 5V 9V DATA CLK (PRO)
SDA-2 SCL-2
to C/CAPTION

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1,000. M = 1,000,000]. All resistors sre 1/6W and 5% tolerance carbon resistor,unless otherwise noted as the following marks.

1/2R : Metal or Metal oxide of 1/2 watt　　1/2S : Solid of 1/2 watt
1RF : Fuse resistor of 1 watt　　1R : Metal oxide of 1 watt

K = ±10% G = ±2% F = ±1%

2.CAPACITOR Unless otherwise noted in schematic,all capacitor valuse less than 1 are expressed in μF,and the values more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.

⁺┤├ Electrolitic capacitor　　ᴱ┤├ Mylar capacitor

3. The parts indicated with "⚠" have special characteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changet in acordance with all informed modification notices.

SCHEMATIC DIAGRAM

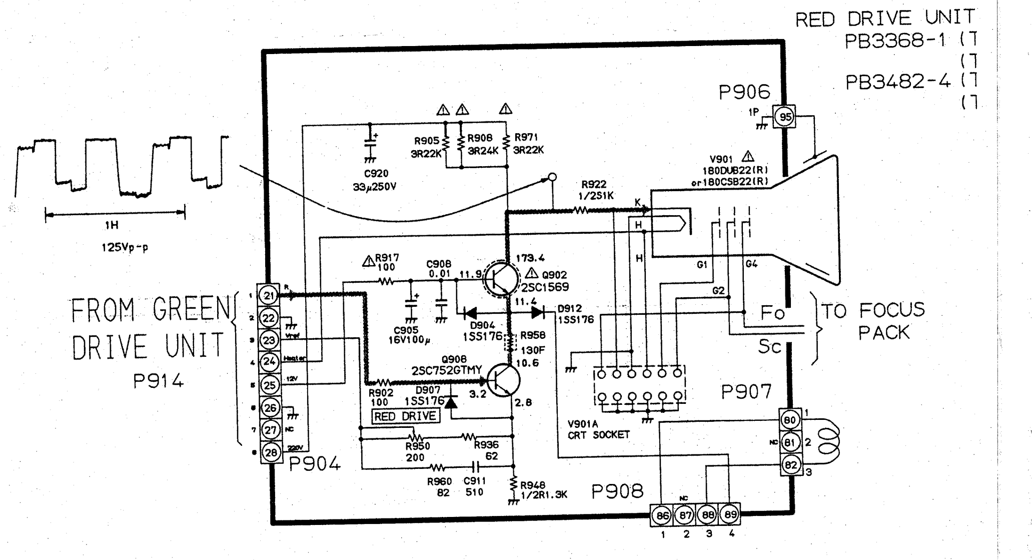
MODELS: **TP48C50** **Chassis No. TAC9390**
TP48C51 **Chassis No. TAC9390**

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" , "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

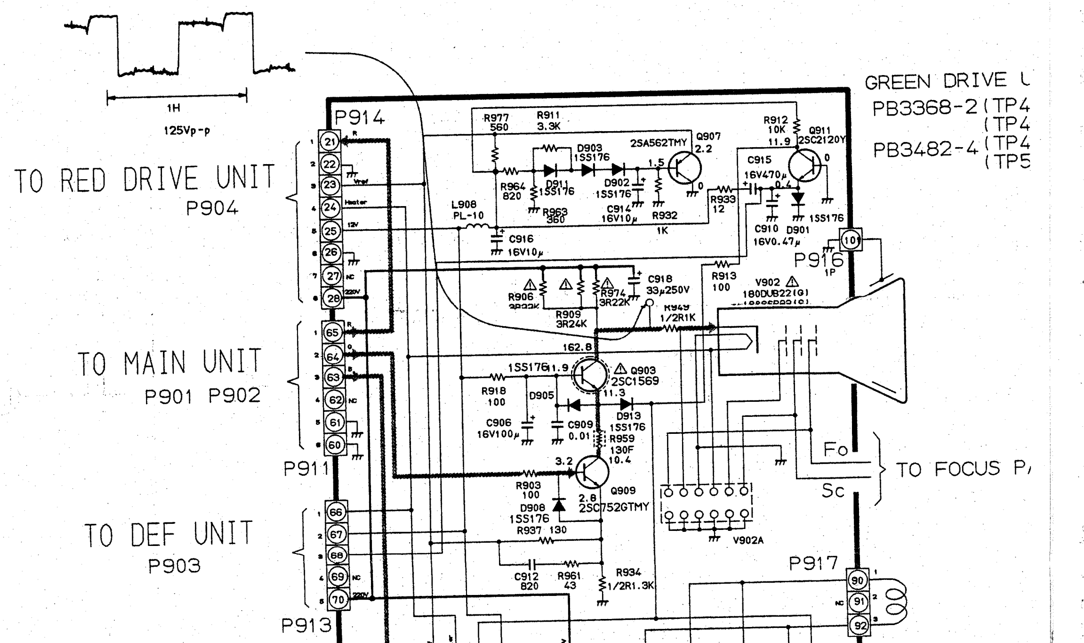
CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTE:

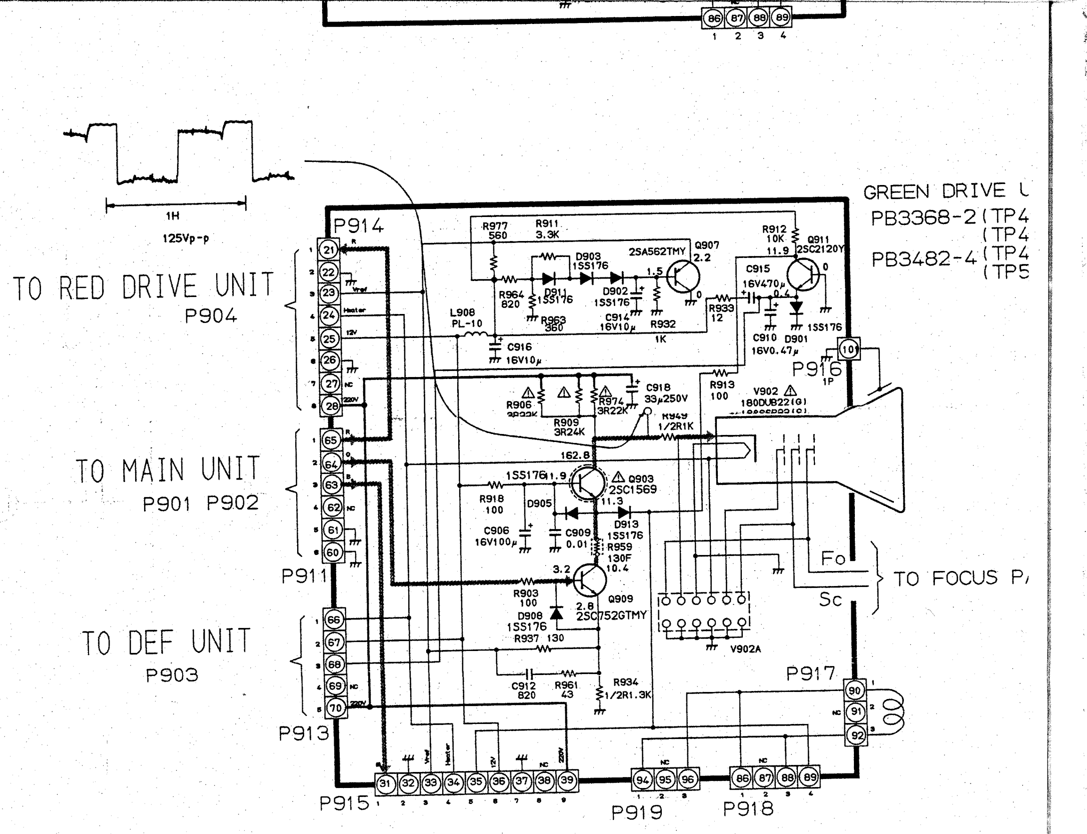
1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors
resistor, unless otherwise noted as the following marks.
1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon com
1RF = Fuse resistor of 1 watt 10W = Cement of 1
K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1
more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the follo
$\overset{+}{\dashv\vdash}$ Electolytic capacitor $\overset{Ⓜ}{\dashv\vdash}$ Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be repl



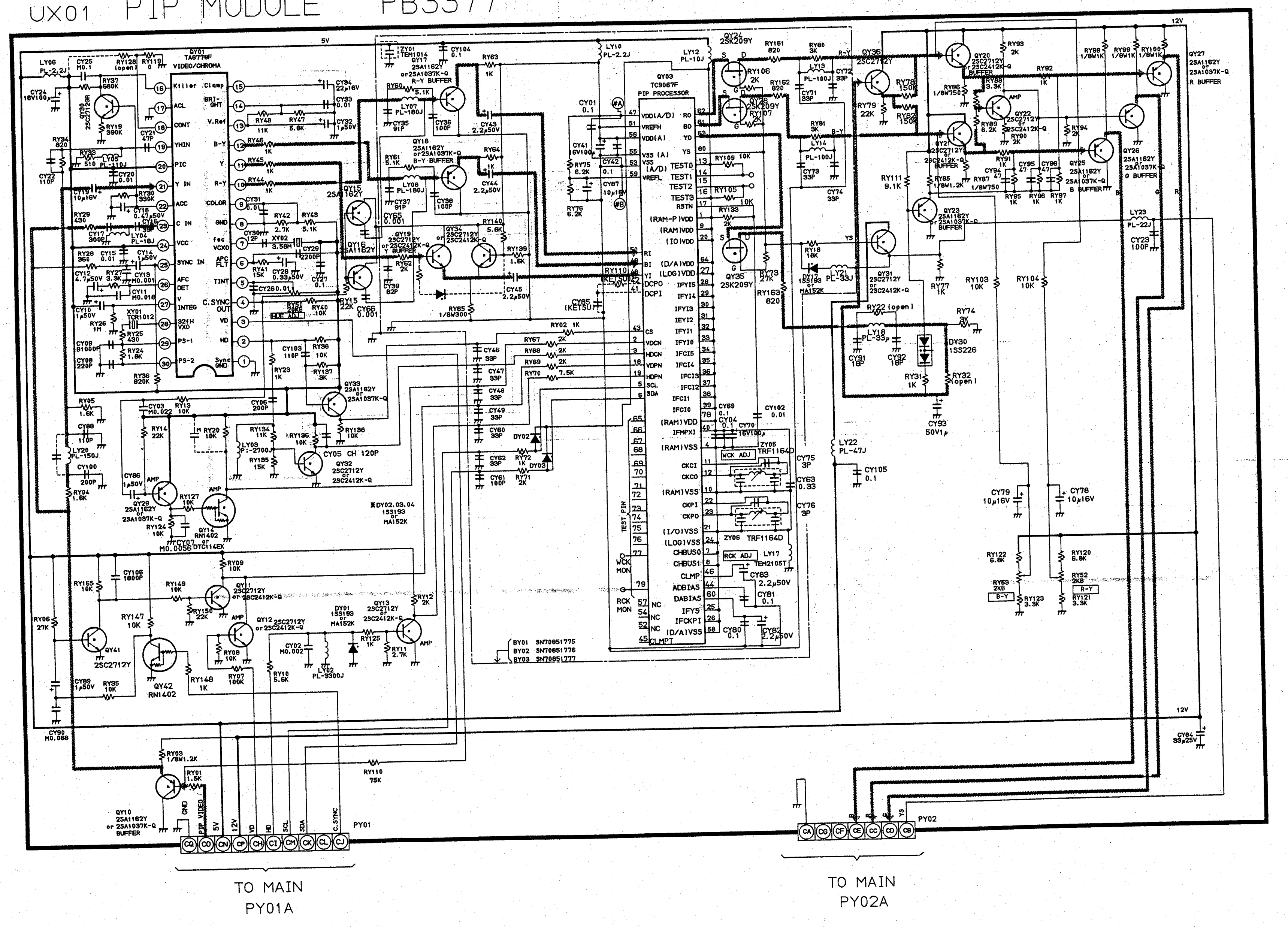
RED DRIVE UNIT
PB3368-1 (T
(T
PB3482-4 (T
(T
1H
125Vp-p
FROM GREEN DRIVE UNIT
P914
P904
P906
1P
95
V901 ⚠
180DUB22(R)
or180CSB22(R)
R905 3R22K
R908 3R24K
R971 3R22K
C920 33μ250V
R922 1/2S1K
K
H
G1
G2
G4
Fo
Sc
TO FOCUS PACK
⚠R917 100
C908 0.01
11.9
173.4
⚠ Q902 2SC1569
11.4
D912 1SS176
C905 16V100μ
D904 1SS176
R958 130F
10.6
Q908 2SC752GTMY
R902 100
D907 1SS176
3.2
2.8
RED DRIVE
R950 200
R936 62
R960 82
C911 510
R948 1/2R1.3K
V901A CRT SOCKET
P907
P908
R
Vref
Heater
12V
NC
220V
21
22
23
24
25
26
27
28
80
81
82
86
87
88
89
1 2 3 4

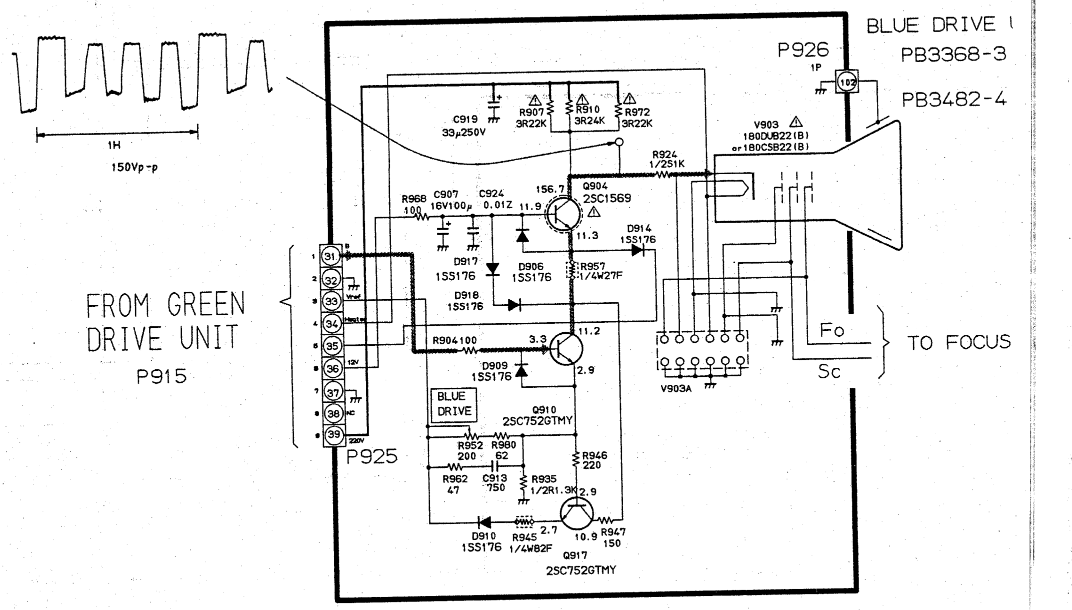


GREEN DRIVE U
PB3368-2 (TP4
(TP4
PB3482-4 (TP4
(TP5
1H
125Vp-p
TO RED DRIVE UNIT
P904
TO MAIN UNIT
P901 P902
TO DEF UNIT
P903
P914
P911
P913
P916
1P
P917
R977 560
R911 3.3K
D903 1SS176
2SA562TMY Q907
2.2
1.5
R964 820
D911 1SS176
D902 1SS176
R963 360
C914 16V10μ
R932 1K
R933 12
R912 10K
11.9
Q911 2SC2120Y
C915 16V470μ
0.4
C910 16V0.47μ
D901 1SS176
L908 PL-10
C916 16V10μ
R906
R909 3R24K
R974 3R22K
C918 33μ250V
R913 100
V902 ⚠
180DUB22(G)
R949 1/2R1K
162.8
1SS176
11.9
⚠ Q903 2SC1569
11.3
R918 100
D905
C906 16V100μ
C909 0.01
D913 1SS176
R959 130F
10.4
3.2
R903 100
D908 1SS176
2.8
Q909 2SC752GTMY
R937 130
C912 820
R961 43
R934 1/2R1.3K
V902A
Fo
Sc
TO FOCUS P
21
22
23
24
25
26
27
28
65
64
63
62
61
60
66
67
68
69
70
101
90
91
92


GREEN DRIVE U
PB3368-2 (TP4
(TP4
PB3482-4 (TP4
(TP5
TO RED DRIVE UNIT
P904
TO MAIN UNIT
P901 P902
TO DEF UNIT
P903
TO FOCUS P
1H
125Vp-p
P914
P911
P913
P915
P916
P917
P919
P918
Q907 2SA562TMY
Q911 2SC2120Y
Q903 2SC1569
Q909 2SC752GTMY
V902A
Fo
Sc

UX01 PIP MODULE PB3377


QY01 TA8779F VIDEO/CHROMA
QY03 TC9067F PIP PROCESSOR
QY24 2SK209Y
QY35 2SK209Y
R-Y BUFFER
B-Y BUFFER
R BUFFER
G BUFFER
B BUFFER
AMP
BUFFER
5V
12V
PY01
PY02
TO MAIN
PY01A
TO MAIN
PY02A
WCK ADJ
RCK ADJ
BLK ADJ


BLUE DRIVE U
PB3368-3
PB3482-4
FROM GREEN
DRIVE UNIT
P915
P926
P925
TO FOCUS
1H
150Vp-p
BLUE DRIVE
Q904 2SC1569
Q910 2SC752GTMY
Q917 2SC752GTMY
V903A
Fo
Sc

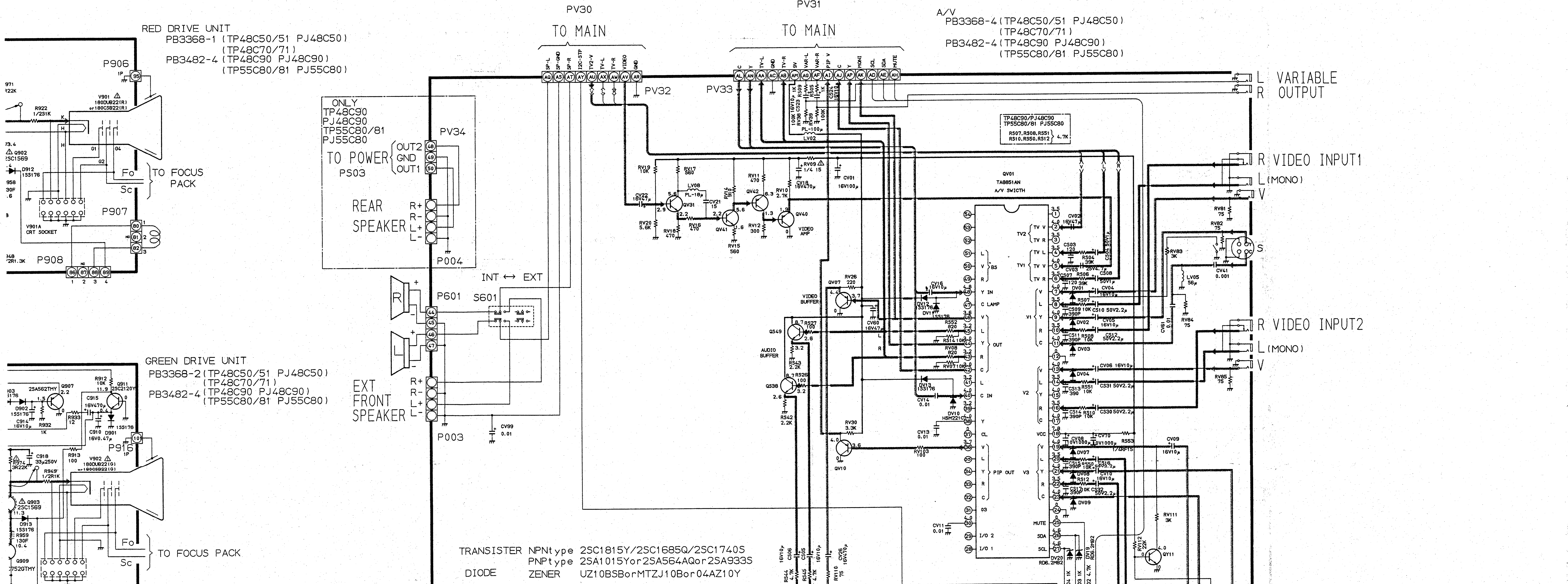
C50 **Chassis No. TAC9390**   **PJ48C50** **Chassis No. TAC9390**   **(1/4)**

C51 **Chassis No. TAC9390**

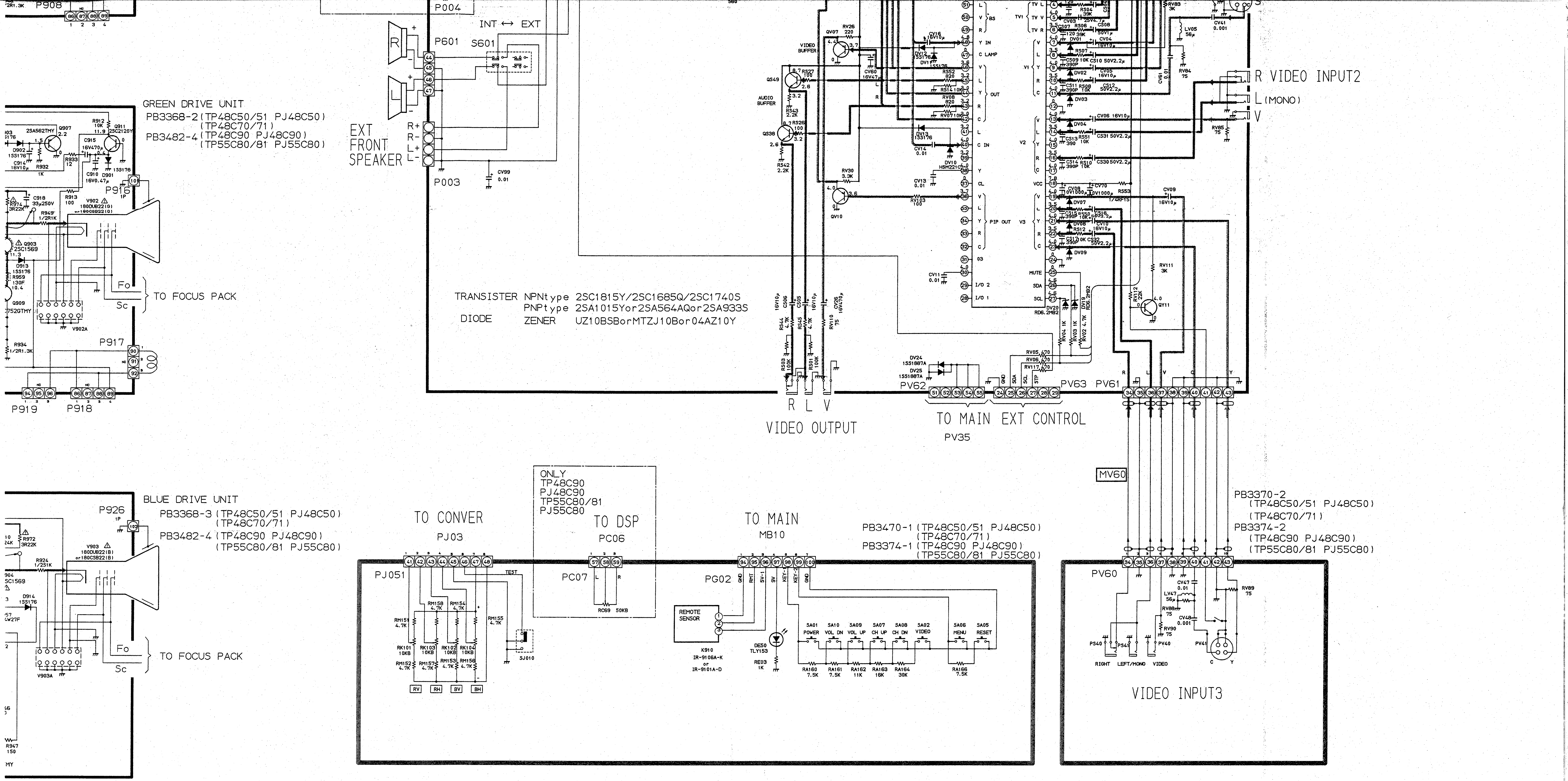
[K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon
oted as the following marks.
of 1/2 watt   1/2S = Carbon compsistion of 1/2 watt
tt   10W = Cement of 10 watt
= ±1%
hematic, all capacitor values less than 1 are expressed in μF, and the values

0V, unless otherwise noted as the following marks.
tor   Mylar capacitor
ecial characteristics, and should be replaced with identical parts only.

4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.


RED DRIVE UNIT
PB3368-1 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3482-4 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
P906
P907
P908
TO FOCUS PACK
Fo
Sc
V901A CRT SOCKET
GREEN DRIVE UNIT
PB3368-2 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3482-4 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
P916
TO FOCUS PACK
ONLY
TP48C90
PJ48C90
TP55C80/81
PJ55C80
TO POWER PS03
OUT2
GND
OUT1
PV34
REAR SPEAKER
R+
R-
L+
L-
P004
P601
S601
INT ↔ EXT
EXT FRONT SPEAKER
P003
CV99 0.01
PV30
TO MAIN
SP-L
SP-GND
SP-R
I2C-STP
TV2-V
TV-L
TV-R
VIDEO
GND
PV32
PV31
TO MAIN
PV33
C
Y
TV-L
GND
TV-R
9V
VAR-L
VAR-R
PIP V
C
Y
MONI
SCL
SDA
MUTE
A/V
PB3368-4 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3482-4 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
L VARIABLE
R OUTPUT
R VIDEO INPUT1
L (MONO)
V
S
R VIDEO INPUT2
L (MONO)
V
QV31
QV41
QV42
QV40
VIDEO AMP
QV07
VIDEO BUFFER
Q549
AUDIO BUFFER
Q538
QV10
QV01
TA8851AN
A/V SWICTH
TP48C90/PJ48C90
TP55C80/81 PJ55C80
R507, R508, R551
R510, R550, R512 } 4.7K
QY11

TRANSISTER NPNtype 2SC1815Y/2SC1685Q/2SC1740S
PNPtype 2SA1015Yor2SA564AQor2SA933S
DIODE ZENER UZ10BSBorMTZJ10Bor04AZ10Y


GREEN DRIVE UNIT
PB3368-2 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3482-4 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
TO FOCUS PACK
Fo
Sc
P908
P916
P917
P919
P918
BLUE DRIVE UNIT
PB3368-3 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3482-4 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
P926
TO FOCUS PACK
P004
P601
S601
INT ↔ EXT
EXT
FRONT
SPEAKER
R+
R-
L+
L-
P003
TRANSISTER NPNtype 2SC1815Y/2SC1685Q/2SC1740S
PNPtype 2SA1015Yor2SA564AQor2SA933S
DIODE ZENER UZ10BSBorMTZJ10Bor04AZ10Y
VIDEO BUFFER
AUDIO BUFFER
R L V
VIDEO OUTPUT
PV62
PV63
PV61
TO MAIN EXT CONTROL
PV35
R VIDEO INPUT2
L (MONO)
V
MV60
PB3370-2
(TP48C50/51 PJ48C50)
(TP48C70/71)
PB3374-2
(TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
ONLY
TP48C90
PJ48C90
TP55C80/81
PJ55C80
TO CONVER
PJ03
TO DSP
PC06
TO MAIN
MB10
PB3470-1 (TP48C50/51 PJ48C50)
(TP48C70/71)
PB3374-1 (TP48C90 PJ48C90)
(TP55C80/81 PJ55C80)
PJ051
PC07
PG02
REMOTE SENSOR
K910
IR-9106A-K
or
IR-9101A-D
SA01 POWER
SA10 VOL DN
SA09 VOL UP
SA07 CH UP
SA08 CH DN
SA02 VIDEO
SA06 MENU
SA05 RESET
PV60
RIGHT
LEFT/MONO
VIDEO
VIDEO INPUT3

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1,000. M = 1,000,000]. All resistors sre 1/6W and 5% tolerance carbon resistor,unless otherwise noted as the following marks.

1/2R : Metal or Metal oxide of 1/2 watt 1/2S : Solid of 1/2 watt
1RF : Fuse resistor of 1 watt 3R : Metal oxide of 1/2 watt

K = ±10% G = ±2% F = ±1%

2.CAPACITOR Unless otherwise noted in schematic.all capacitor valuse less than 1 are expressed in μF.and the values more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.

Electrolitic capacitor Mylar capacitor

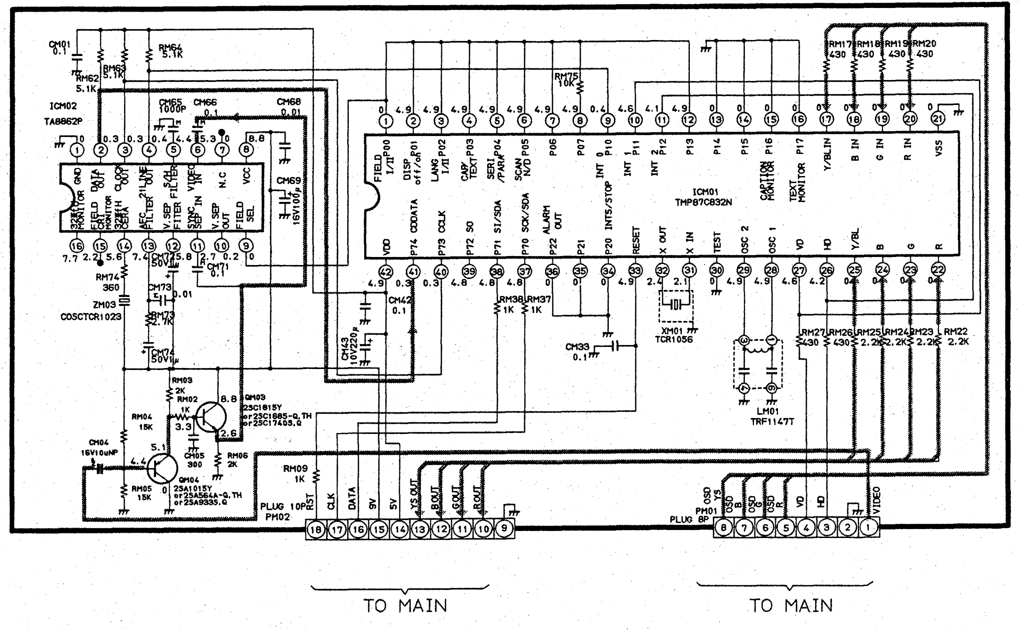
3. The parts indicated with "⚠" have specialcharacteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changet in acordance with all informed modification notices.

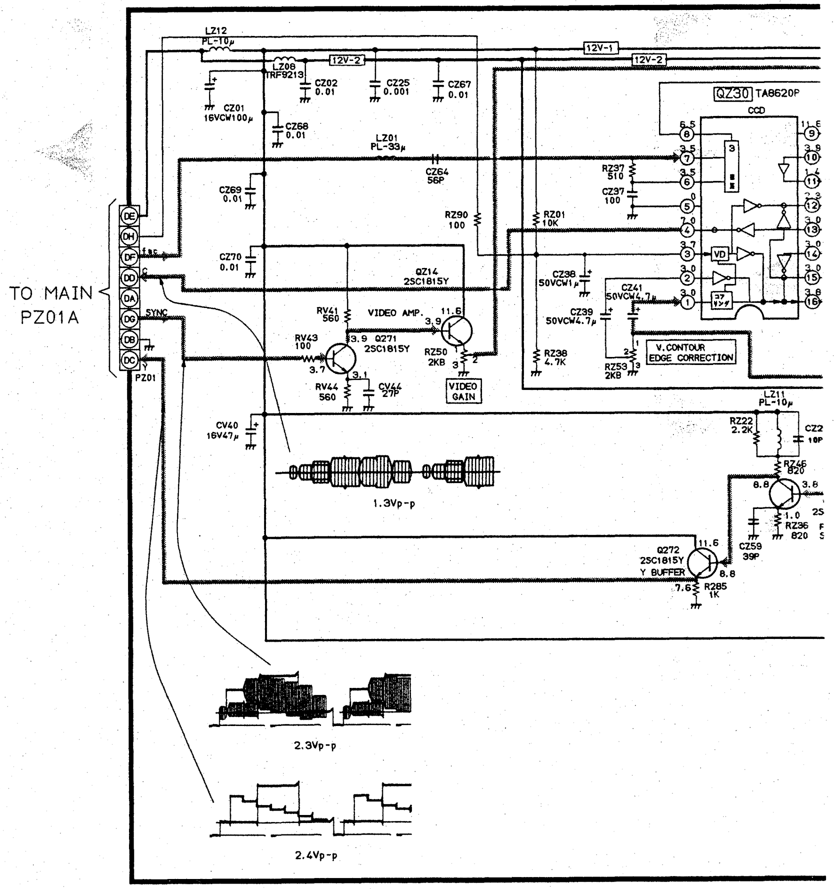
SCHEMATIC DIAGRAM

MODELS: **TP48C50** Chassis No. TAC9390 **PJ48C50** Cl
TP48C51 Chassis No. TAC9390

UC01 C/CAPTION PB3375


ICM02 TA8862P
ICM01 TMP87C832N
ZM03 CDSCTCR1023
XM01 TCR1056
LM01 TRF1147T
QM03 2SC1815Y
QM04 2SA1015Y
PLUG 10P PM02
PLUG 8P PM01
RST CLK DATA 9V 5V Y OUT B OUT G OUT R OUT
OSD YS BL G R YD HD VIDEO
TO MAIN
TO MAIN

UZ01 CCD PB3


TO MAIN
PZ01A
PZ01
QZ30 TA8620P
CCD
12V-1
12V-2
QZ14 2SC1815Y
VIDEO AMP.
QZ71 2SC1815Y
VIDEO GAIN
V.CONTOUR EDGE CORRECTION
QZ72 2SC1815Y Y BUFFER
SYNC
1.3Vp-p
2.3Vp-p
2.4Vp-p

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1,000, M = 1,000,000]. All resistors sre 1/6W and 5% tolerance carbon resistor,unless otherwise noted as the following marks.

1/2R : Metal or Metal oxide of 1/2 watt
1/2S : Solid of 1/2 watt
1RF : Fuse resistor of 1 watt
10W : Cement of 10 watts

K = ±10% G = ±2% F = ±1%

2. CAPACITOR Unless otherwise noted in schematic,all capacitor valuse less than 1 are expressed in μF,and the values more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.

⊣|⊢ Electrolitic capacitor ⊣⊢ Mylar capacitor

3. The parts indicated with "⚠" have specialcharacteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changet in acordance with all informed modification notices.

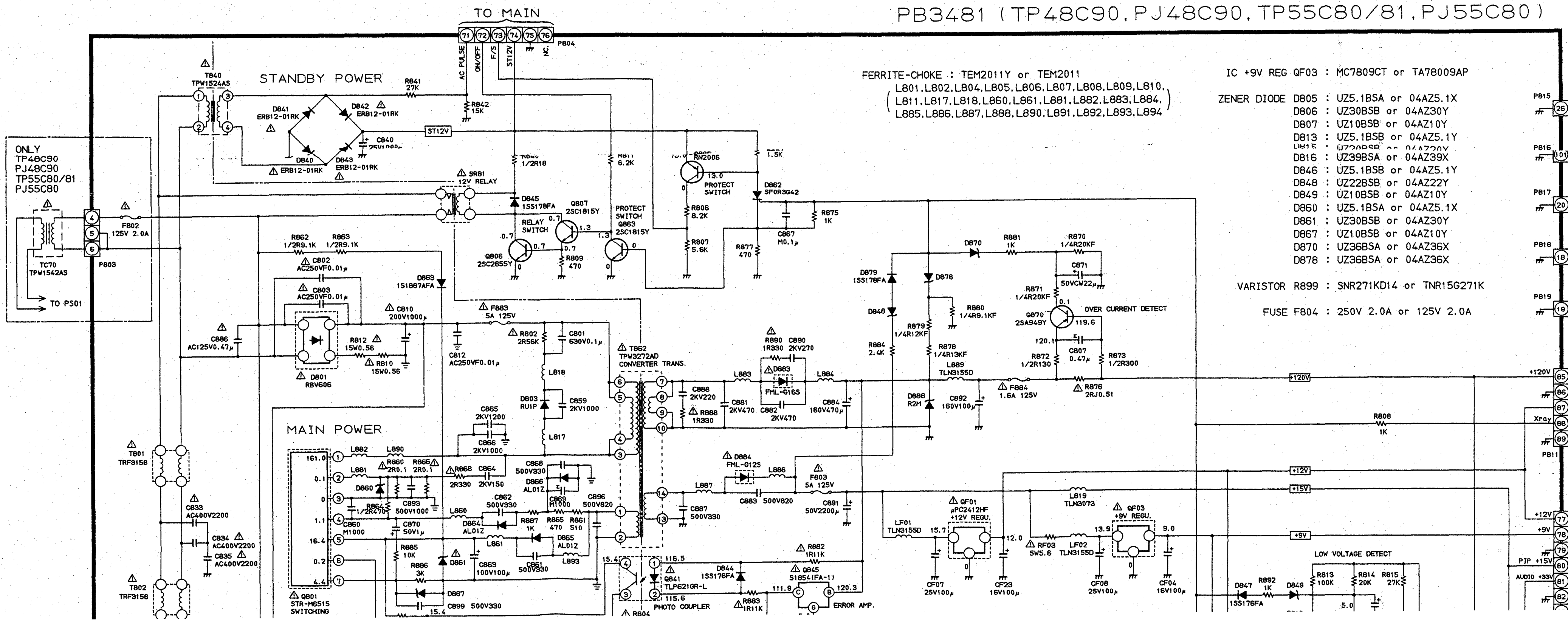
CAUTION

The grounding (⏚ mark) in the schematic diagram is separated from the other circuit ground (⏚ mark) to prevent possible shock hazard.

⏚ : Live ground
⏚ : Isolated ground

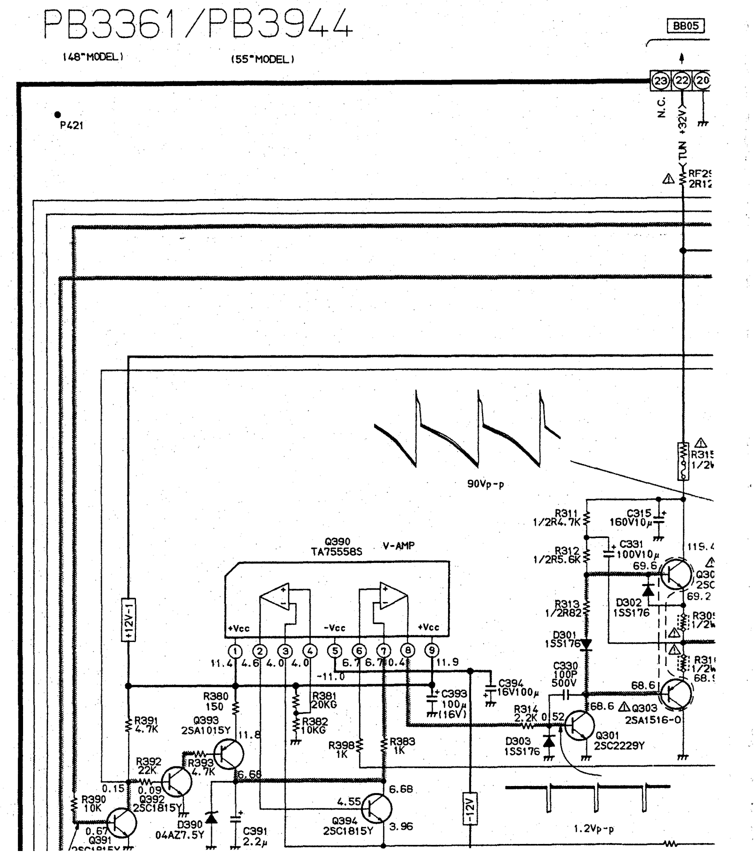
POWER UNIT

PB3364 (TP48C50/51, PJ48C50, TP48C70/71)
PB3481 (TP48C90, PJ48C90, TP55C80/81, PJ55C80)


TO MAIN
AC PULSE
ON/OFF
F/S
ST12V
NC
P804
STANDBY POWER
T840 TPW1524AS
ONLY TP48C90 PJ48C90 TP55C80/81 PJ55C80
TC70 TPW1542AS
TO P501
P803
F802 125V 2.0A
SR81 12V RELAY
RELAY SWITCH
PROTECT SWITCH
MAIN POWER
T862 TPW3272AD CONVERTER TRANS.
QF01 μPC2412HF +12V REGU.
QF03 +9V REGU.
LOW VOLTAGE DETECT
OVER CURRENT DETECT
PHOTO COUPLER
ERROR AMP.
Q801 STR-M6515 SWITCHING
FERRITE-CHOKE : TEM2011Y or TEM2011
(L801, L802, L804, L805, L806, L807, L808, L809, L810, L811, L817, L818, L860, L861, L881, L882, L883, L884, L885, L886, L887, L888, L890, L891, L892, L893, L894)
IC +9V REG QF03 : MC7809CT or TA78009AP
ZENER DIODE D805 : UZ5.1BSA or 04AZ5.1X
D806 : UZ30BSB or 04AZ30Y
D807 : UZ10BSB or 04AZ10Y
D813 : UZ5.1BSB or 04AZ5.1Y
D815 : UZ20BSB or 04AZ20Y
D816 : UZ39BSA or 04AZ39X
D846 : UZ5.1BSB or 04AZ5.1Y
D848 : UZ22BSB or 04AZ22Y
D849 : UZ10BSB or 04AZ10Y
D860 : UZ5.1BSA or 04AZ5.1X
D861 : UZ30BSB or 04AZ30Y
D867 : UZ10BSB or 04AZ10Y
D870 : UZ36BSA or 04AZ36X
D878 : UZ36BSA or 04AZ36X
VARISTOR R899 : SNR271KD14 or TNR15G271K
FUSE F804 : 250V 2.0A or 125V 2.0A
CONV. OUT
RF SW.
CRT.D.
CHUKANABE
FOCUS PAC
+120V
TO DEF
TO MAIN

DEF/HV

PB3361/PB3944
(48"MODEL) (55"MODEL)


B805
P421
Q390 TA7555S V-AMP
90Vp-p
1.2Vp-p
Q393 2SA1015Y
Q394 2SC1815Y
Q391 2SC1815Y
Q301 2SC2229Y
Q303 2SA1516-O

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1,000, M = 1,000,000]. All resistors sre 1/6W and 5% tolerance carbon resistor,unless otherwise noted as the following marks.
   1/2R : Metal or Metal oxide of 1/2 watt 1/2S : Solid of 1/2 watt
   1RF : Fuse resistor of 1 watt 10W : Cement of 10 watts
   K = ±10% G = ±2% F = ±1%

2. CAPACITOR Unless otherwise noted in schematic,all capacitor value less than 1 are expressed in μF,and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electrolitic capacitor Mylar capacitor

3. The parts indicated with "⚠" have special characteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changet in acordance with all informed modification notices.

CAUTION

The grounding (⏚ mark) in the schematic diagram is separated from the other circuit ground (⏚ mark) to prevent possible shock hazard.

⏚ : Live ground
⏚ : Isolated ground

POWER UNIT
PB3364 (TP48C50/51, PJ48C50, TP48C70/71)
PB3481 (TP48C90, PJ48C90, TP55C80/81, PJ55C80)

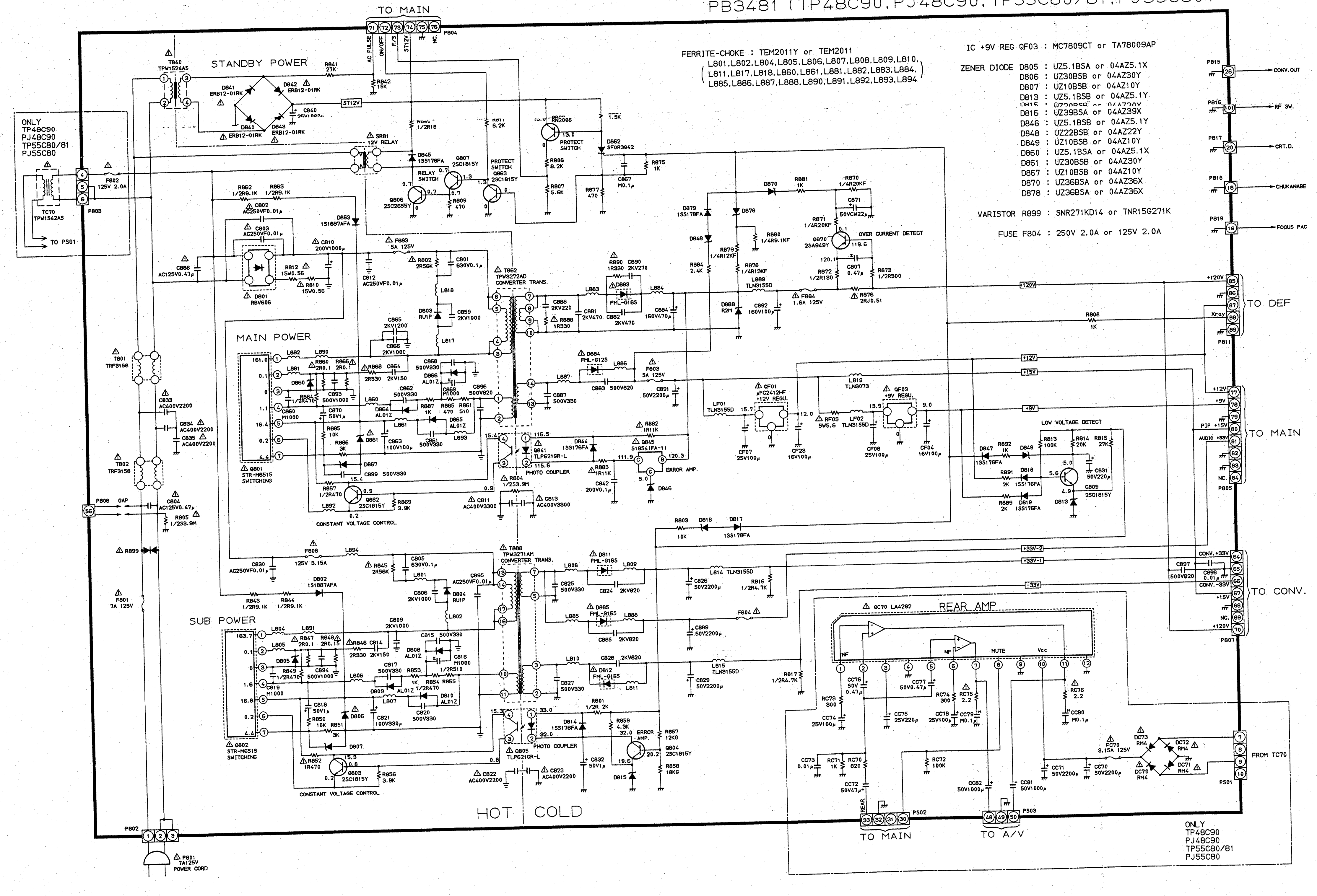
FERRITE-CHOKE : TEM2011Y or TEM2011
(L801, L802, L804, L805, L806, L807, L808, L809, L810, L811, L817, L818, L860, L861, L881, L882, L883, L884, L885, L886, L887, L888, L890, L891, L892, L893, L894)

IC +9V REG QF03 : MC7809CT or TA78009AP

ZENER DIODE D805 : UZ5.1BSA or 04AZ5.1X
D806 : UZ30BSB or 04AZ30Y
D807 : UZ10BSB or 04AZ10Y
D813 : UZ5.1BSB or 04AZ5.1Y
D815 : UZ20BSB or 04AZ20Y
D816 : UZ39BSA or 04AZ39X
D846 : UZ5.1BSB or 04AZ5.1Y
D848 : UZ22BSB or 04AZ22Y
D849 : UZ10BSB or 04AZ10Y
D860 : UZ5.1BSA or 04AZ5.1X
D861 : UZ30BSB or 04AZ30Y
D867 : UZ10BSB or 04AZ10Y
D870 : UZ36BSA or 04AZ36X
D878 : UZ36BSA or 04AZ36X

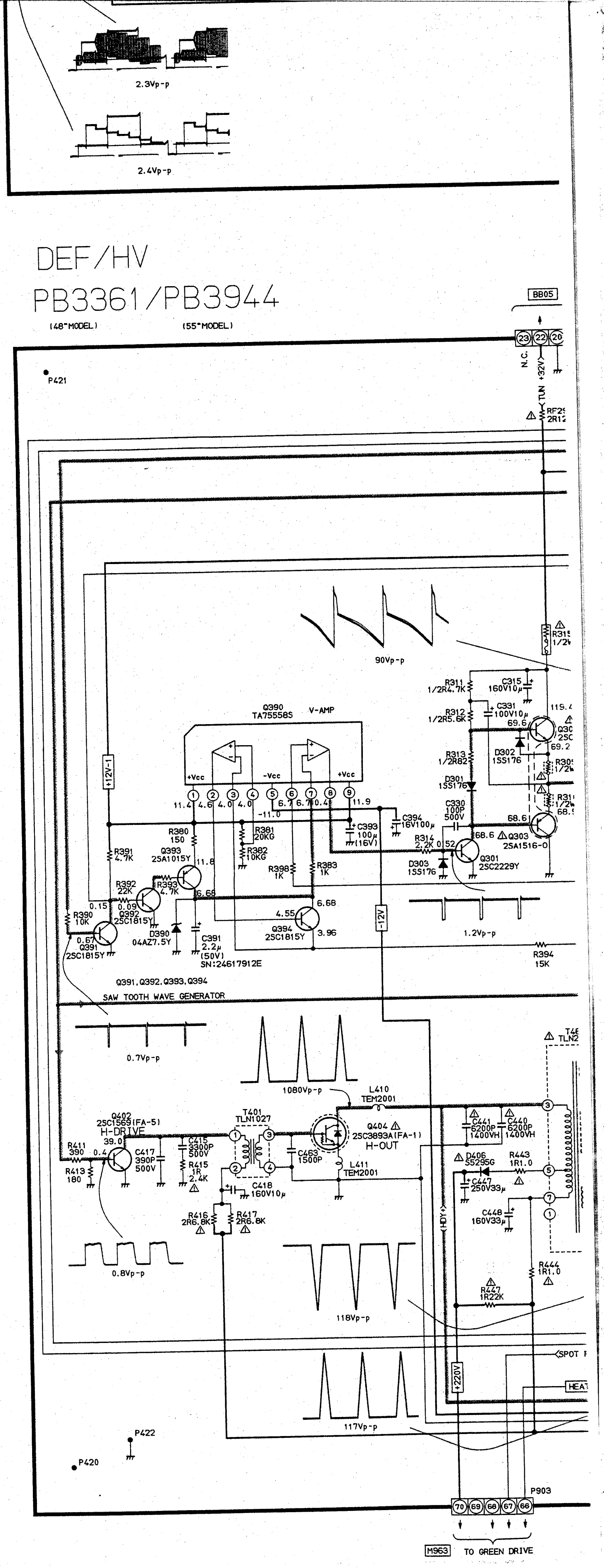
VARISTOR R899 : SNR271KD14 or TNR15G271K

FUSE F804 : 250V 2.0A or 125V 2.0A

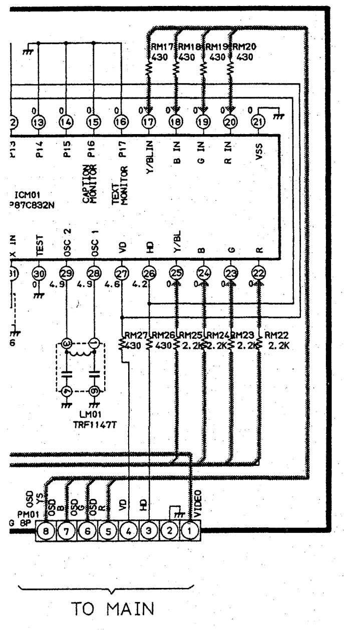

TO MAIN
AC PULSE
ON/OFF
F/S
5T12V
NC
P804
STANDBY POWER
T840 TPW1524AS
D841 ERB12-01RK
D842 ERB12-01RK
D840 ERB12-01RK
D843 ERB12-01RK
C840
5T12V
R841 27K
R842 15K
SR81 12V RELAY
D845 1SS178FA
Q807 2SC1815Y
RELAY SWITCH
Q805 2SC2655Y
R809 470
PROTECT SWITCH
Q863 2SC1815Y
Q806 2SA1015Y
R806 8.2K
R807 5.6K
D862 SFOR3042
R875 1K
R877 470
C867
ONLY TP48C90 PJ48C90 TP55C80/81 PJ55C80
TC70 TPW1542AS
TO P501
F802 125V 2.0A
P803
R862 1/2R9.1K
R863 1/2R9.1K
C802 AC250VF0.01μ
C803 AC250VF0.01μ
D863 1S1887AFA
C810 200V1000μ
C866 AC125V0.47μ
R812 15W0.56
R810 15W0.56
D801 RBV606
F863 5A 125V
R802 2R56K
C801 630V0.1μ
C812 AC250VF0.01μ
L818
D803 RU1P
C859 2KV1000
L817
T862 TPW3272AD CONVERTER TRANS.
MAIN POWER
Q801 STR-M6515 SWITCHING
C865 2KV1200
C866 2KV1000
L882
L890
R860 2R0.1
R866 2R0.1
R868 2R330
C864 2KV150
C868 500V330
D866 AL01Z
C862 500V330
C863 100V100μ
C861 500V330
C899 500V330
R867 1/2R470
Q862 2SC1815Y
R869 3.9K
L892
CONSTANT VOLTAGE CONTROL
T801 TRF3158
C833 AC400V2200
C834 AC400V2200
C835 AC400V2200
T802 TRF3158
P808 GAP
C804 AC125V0.47μ
R805 1/253.9M
R899
F801 7A 125V
C886 2KV220
C881 2KV470
C882 2KV470
R886 1R330
R890 1R330
C890 2KV270
D883 FML-G16S
L883
L884
C884 160V470μ
D888 R2M
C892 160V100μ
L889 TLN3155D
F884 1.6A 125V
R876 2RJ0.51
D870
R881 1K
R870 1/4R20KF
C871 50VCW22μ
R871 1/4R20KF
Q870 2SA949Y
OVER CURRENT DETECT
C807 0.47μ
R872 1/2R130
R873 1/2R300
R880 1/4R9.1KF
R879 1/4R12KF
R878 1/4R13KF
R884 2.4K
D879 1SS178FA
D848
D878
D884 FML-G12S
L886
L887
C887 500V330
C883 500V820
F803 5A 125V
C891 50V2200μ
L819 TLN3073
QF01 μPC2412HF +12V REGU.
LF01 TLN3155D
CF07 25V100μ
CF23 16V100μ
RF03 5W5.6
LF02 TLN3155D
QF03 +9V REGU.
CF08 25V100μ
CF04 16V100μ
R808 1K
+120V
+12V
+15V
+9V
LOW VOLTAGE DETECT
D847 1SS178FA
R892 1K
D849
R813 100K
R814 20K
R815 27K
C831 50V220μ
Q809 2SC1815Y
R891 2K
D818 1SS178FA
R889 2K
D819 1SS178FA
D813
Q841 TLP621GR-L PHOTO COUPLER
D844 1SS176FA
Q845 SI854(FA-1)
R882 1R11K
R883 1R11K
C842 200V0.1μ
R804 1/253.9M
C811 AC400V3300
C813 AC400V3300
ERROR AMP.
D846
R803 10K
D816
D817 1SS178FA
F806 125V 3.15A
L894
C830 AC250VF0.01μ
R845 2R56K
C805 630V0.1μ
L801
C806 2KV1000
D804 RU1P
C895 AC250VF0.01μ
L802
D802 1S1887AFA
R843 1/2R9.1K
R844 1/2R9.1K
T868 TPW3271AM CONVERTER TRANS.
SUB POWER
Q802 STR-M6515 SWITCHING
L804
L891
L805
R847 2R0.1
R848 2R0.15
R846 2R330
C814 2KV150
C815 500V330
D808 AL01Z
C816 M1000
C817 500V330
R853 1/2R510
R854 R855
D809 AL01Z
C894 500V1000
D806
L807
C821 100V330μ
C820 500V330
R849 1/2R470
C819 M1000
C818 50V1μ
R850 10K
R851 3K
D807
R852 1R470
Q803 2SC1815Y
R856 3.9K
CONSTANT VOLTAGE CONTROL
C822 AC400V2200
C823 AC400V2200
HOT
COLD
D811 FML-G16S
L808
L809
C825 500V330
C824 2KV820
D885 FML-G16S
L885
L888
C885 2KV820
L810
C828 2KV820
D812 FML-G16S
C827 500V330
L811
L814 TLN3155D
C826 50V2200μ
R816 1/2R4.7K
F804
C889 50V2200μ
L815 TLN3155D
C829 50V2200μ
R817 1/2R4.7K
R801 1/2R 2K
D814 1SS176FA
R859 4.3K
ERROR AMP.
Q804 2SC1815Y
R857 12KG
R858 18KG
C832 50V1μ
D815
Q805 TLP621GR-L PHOTO COUPLER
+33V-2
+33V-1
-33V
C897 500V820
C896 0.01μ
QC70 LA4282 REAR AMP
NF
MUTE
Vcc
CC76 50V 0.47μ
CC77 50V0.47μ
RC76 2.2
CC80 M0.1μ
RC73 300
CC74 25V100μ
CC75 25V220μ
CC78 25V100μ
RC74 300
RC75 2.2
CC79 M0.1μ
CC73 0.01μ
RC71 1K
RC70 820
RC72 100K
CC72 50V47μ
CC82 50V1000μ
CC81 50V1000μ
CC71 50V2200μ
CC70 50V2200μ
FC70 3.15A 125V
DC73 RH4
DC72 RH4
DC70 RH4
DC71 RH4
FROM TC70
P501
REAR
P502
TO MAIN
P503
TO A/V
P802
P801 7A125V POWER CORD
ONLY TP48C90 PJ48C90 TP55C80/81 PJ55C80
P815 CONV.OUT
P816 RF SW.
P817 CRT.D.
P818 CHUKANABE
P819 FOCUS PAC
+120V
Xray
NC.
P811
TO DEF
+12V
+9V
PIP +15V
AUDIO +33V
P805
TO MAIN
CONV.+33V
CONV.-33V
+15V
NC.
+120V
P807
TO CONV.

DEF/HV
PB3361/PB3944

('48"MODEL) ('55"MODEL)

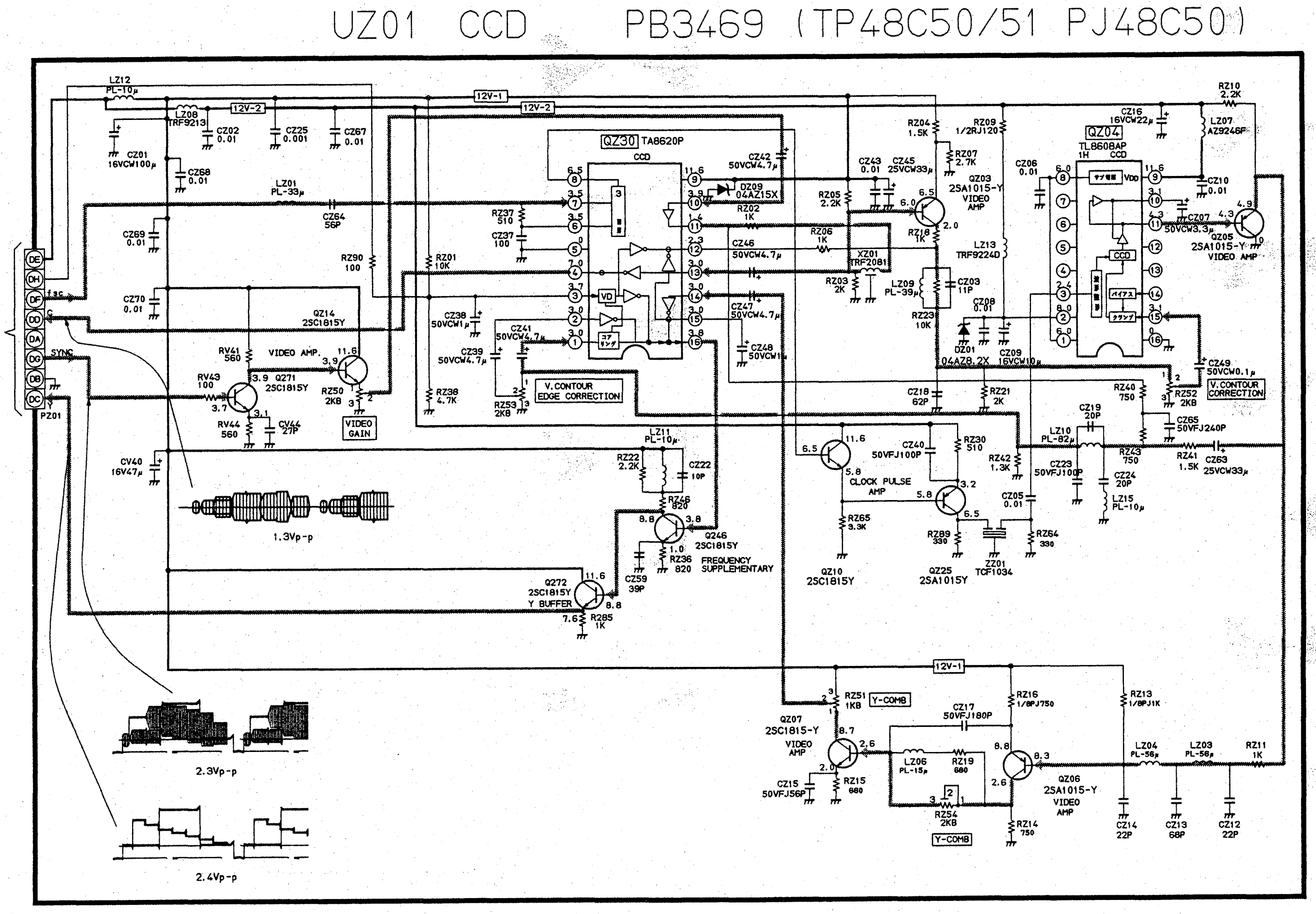

2.3Vp-p
2.4Vp-p
BB05
N.C.
+32V
TUN
P421
RF2
2R1
R31
1/2
90Vp-p
R311 1/2R4.7K
C315 160V10μ
R312 1/2R5.6K
C331 100V10μ
69.6
D302 1SS176
R313 1/2R82
D301 1SS176
C330 100P 500V
Q390 TA7558S V-AMP
+Vcc
-Vcc
+12V-1
11.4
4.6
4.0
4.0
-11.0
6.7
6.7
10.4
11.9
C393 100μ (16V)
C394 16V100μ
R314 2.2K
68.6
Q303 2SA1516-O
Q301 2SC2229Y
D303 1SS176
R360 150
R361 20K
R362 10KG
Q393 2SA1015Y
R391 4.7K
R398 1K
R383 1K
R392 22K
Q392 2SC1815Y
R393 4.7K
Q394 2SC1815Y
R390 10K
Q391 2SC1815Y
D390 04AZ7.5Y
C391 2.2μ (50V) SN:24617912E
Q391,Q392,Q393,Q394
SAW TOOTH WAVE GENERATOR
1.2Vp-p
R394 15K
-12V
0.7Vp-p
1080Vp-p
L410 TEM2001
Q402 2SC1569(FA-5) H-DRIVE
T401 TLN1027
Q404 2SC3893A(FA-1) H-OUT
C415 3300P 500V
C417 390P 500V
R415 1R 2.4K
C418 160V10μ
C463 1500P
C441 6200P 1400VH
C440 6200P 1400VH
L411 TEM2001
D406 SS295G
R443 1R1.0
C447 250V33μ
C448 160V33μ
R416 2R6.8K
R417 2R6.8K
R411 390
R413 180
0.8Vp-p
118Vp-p
117Vp-p
R444 1R1.0
R447 1R22K
HEAT
SPOT
+220V
P422
P420
P903
M963
TO GREEN DRIVE

MODELS: TP48C50 Chassis No. TAC9390 PJ48C50 Chassis No. TAC9390 (3/4)
TP48C51 Chassis No. TAC9390



ICM01
P87C832N
RH17 430
RH18 430
RH19 430
RH20 430
RH27 430
RH26 430
RH25 2.2K
RH24 2.2K
RH23 2.2K
RH22 2.2K
LM01
TRF1147T
PM01
TO MAIN

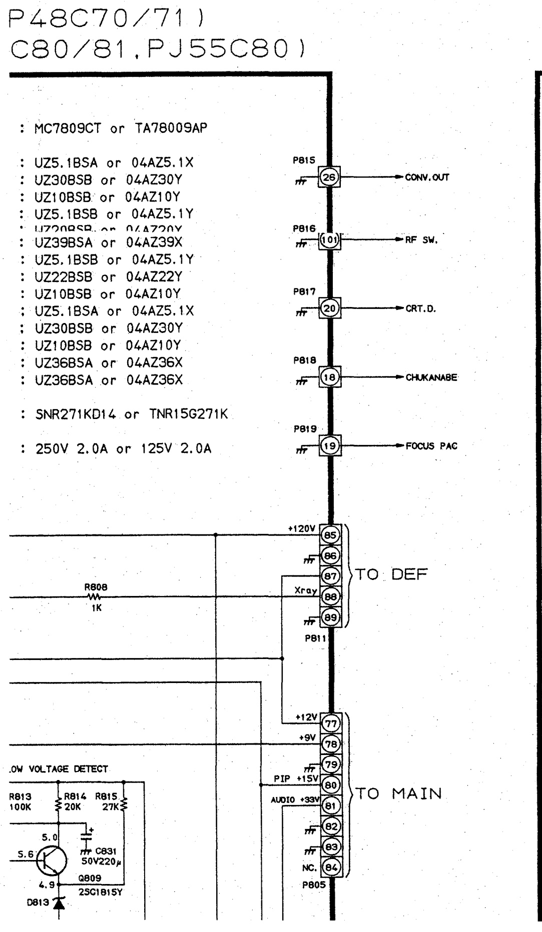
UZ01 CCD PB3469 (TP48C50/51 PJ48C50)



TO MAIN
PZ01A
PZ01
SYNC
QZ30 TA8620P
CCD
QZ04 TLB608AP 1H CCD
QZ14 2SC1815Y
QZ71 2SC1815Y
VIDEO AMP.
VIDEO GAIN
V.CONTOUR EDGE CORRECTION
V.CONTOUR CORRECTION
QZ03 2SA1015-Y VIDEO AMP
QZ05 2SA1015-Y VIDEO AMP
QZ46 2SC1815Y FREQUENCY SUPPLEMENTARY
QZ72 2SC1815Y Y BUFFER
QZ10 2SC1815Y CLOCK PULSE AMP
QZ25 2SA1015Y
XZ01 TCF1034
QZ07 2SC1815-Y VIDEO AMP
QZ06 2SA1015-Y VIDEO AMP
12V-1
12V-2
Y-COMB
1.3Vp-p
2.3Vp-p
2.4Vp-p

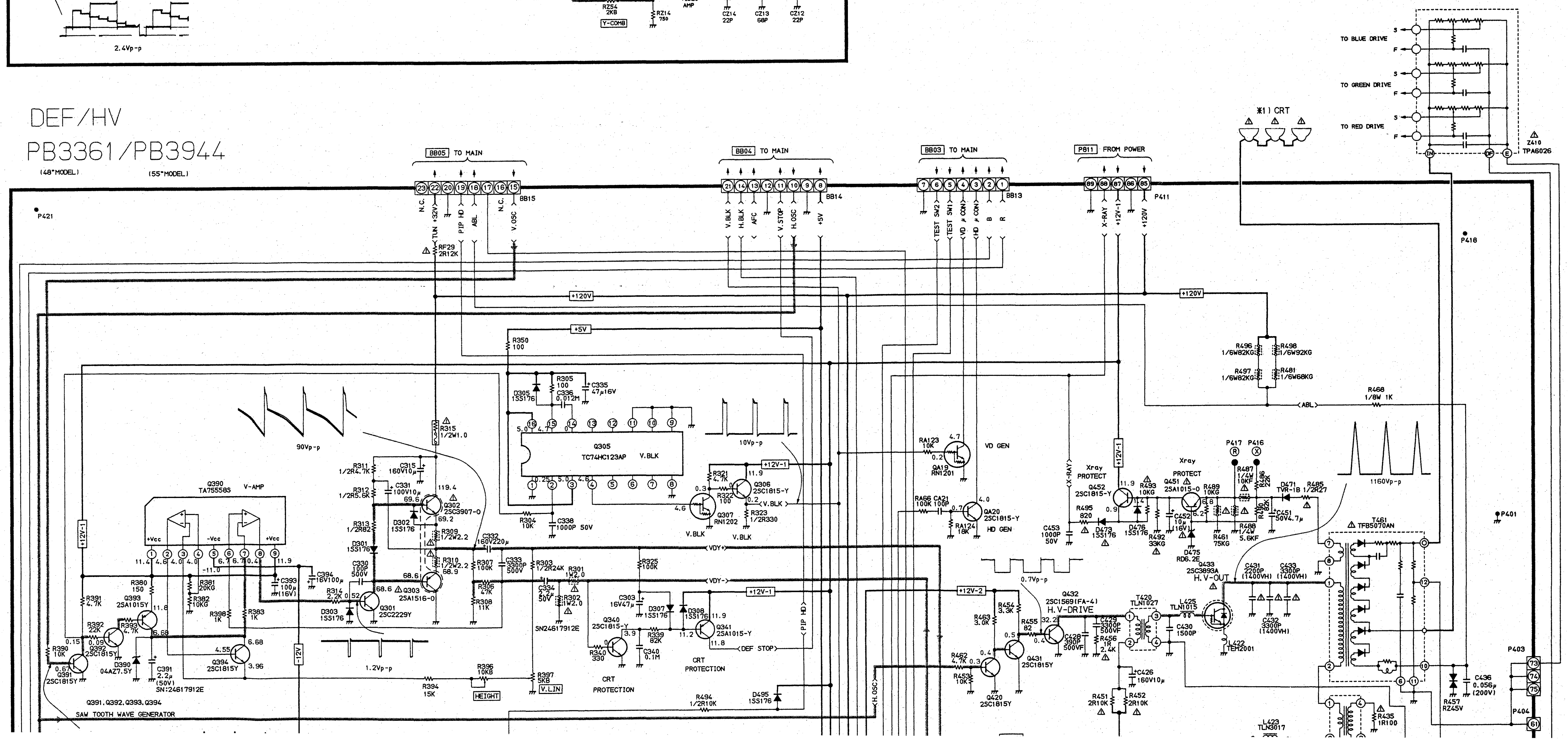
*1) HETER RESISTOR R469

USING CRT	R469
HITACHI 180CSB22	2WF2.4 FRN98Z3D249J
TOSHIBA 180DUB22	2WF1.8 FRN98Z3D189J



P48C70/71)
C80/81, PJ55C80)
: MC7809CT or TA78009AP
: UZ5.1BSA or 04AZ5.1X
: UZ30BSB or 04AZ30Y
: UZ10BSB or 04AZ10Y
: UZ5.1BSB or 04AZ5.1Y
: UZ39BSA or 04AZ39X
: UZ5.1BSB or 04AZ5.1Y
: UZ22BSB or 04AZ22Y
: UZ10BSB or 04AZ10Y
: UZ5.1BSA or 04AZ5.1X
: UZ30BSB or 04AZ30Y
: UZ10BSB or 04AZ10Y
: UZ36BSA or 04AZ36X
: UZ36BSA or 04AZ36X
: SNR271KD14 or TNR15G271K
: 250V 2.0A or 125V 2.0A
P815 CONV.OUT
P816 RF SW.
P817 CRT.D.
P818 CHUKANABE
P819 FOCUS PAC
TO DEF
TO MAIN
P811
P805
LOW VOLTAGE DETECT
Q809 2SC1815Y
D813

DEF/HV
PB3361/PB3944

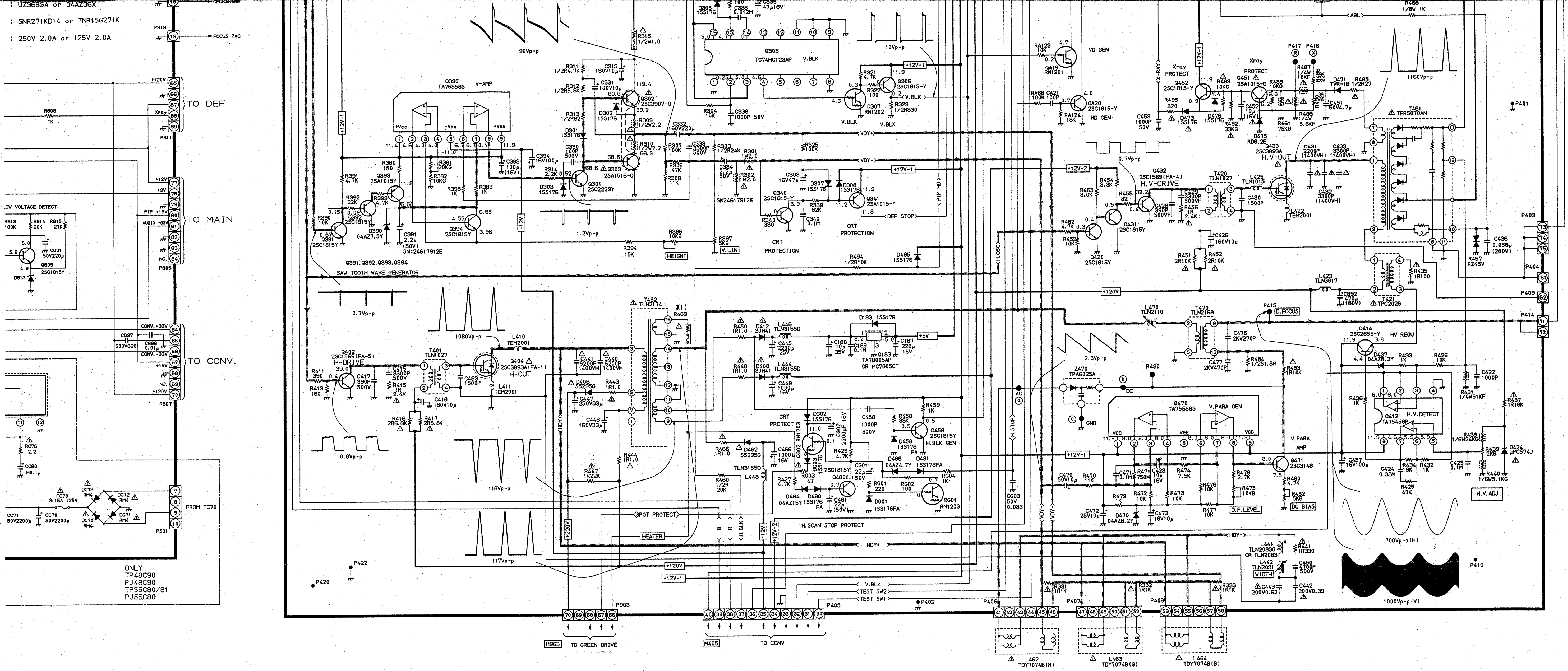


(48"MODEL)
(55"MODEL)
BB05 TO MAIN
BB04 TO MAIN
BB03 TO MAIN
P811 FROM POWER
BB15
BB14
BB13
P411
P421
P418
P401
P403
P404
+120V
+5V
+12V-1
+12V-2
VDY+
VDY-
ABL
TO BLUE DRIVE
TO GREEN DRIVE
TO RED DRIVE
*1) CRT
Z410 TPA6026
Q390 TA75558S V-AMP
Q391,Q392,Q393,Q394 SAW TOOTH WAVE GENERATOR
Q301 2SC2229Y
Q302 2SC3907-O
Q303 2SA1516-O
Q305 TC74HC123AP V.BLK
Q306 2SC1815-Y
Q307 RN1202
V.BLK
Q340 2SC1815-Y
Q341 2SA1015-Y
CRT PROTECTION
DEF STOP
HEIGHT
V.LIN
90Vp-p
10Vp-p
1.2Vp-p
QA19 RN1201 VD GEN
QA20 2SC1815-Y HD GEN
Q452 2SC1815-Y Xray PROTECT
Q451 2SA1015-O Xray PROTECT
Q432 2SC1569(FA-41) H.V-DRIVE
Q431 2SC1815Y
Q420 2SC1815Y
Q433 2SC3893A H.V-OUT
T461 TFB5070AN
T420 TLN1027
L425 TLN1015
L422 TEM2001
L423 TLN3017
0.7Vp-p
1160Vp-p
P417 P416

: UZ36BSA or 04AZ36X

: SNR271KD14 or TNR15G271K

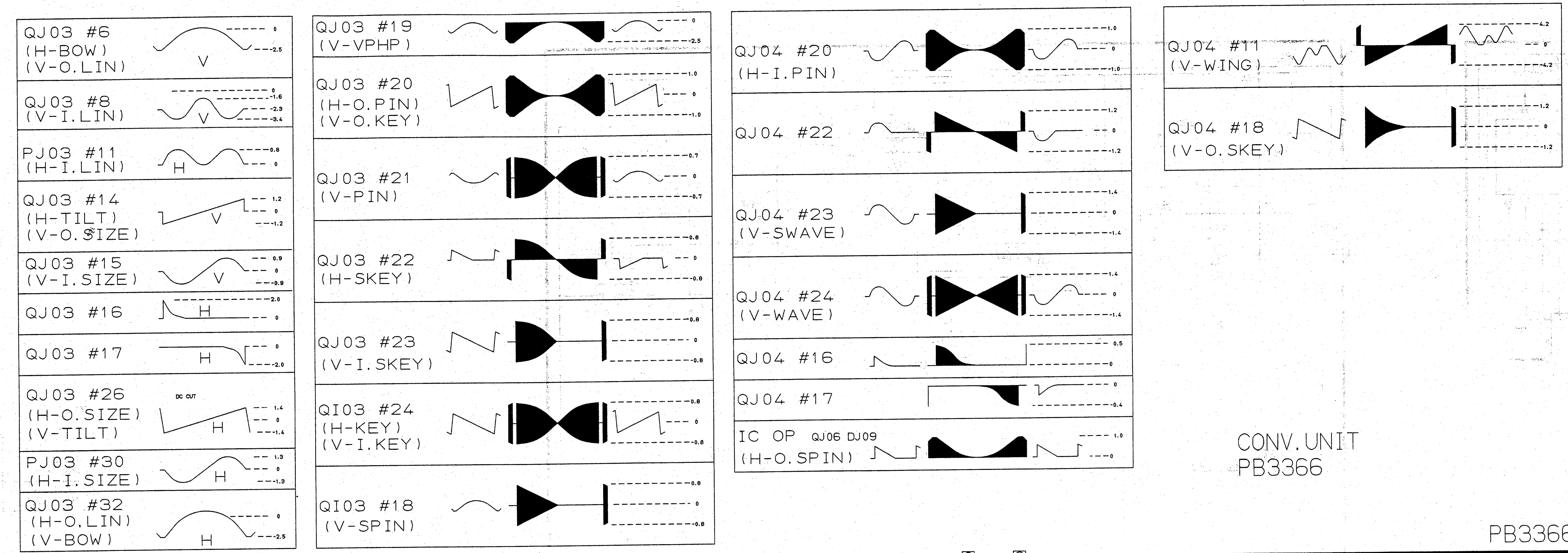
: 250V 2.0A or 125V 2.0A


TO DEF
TO MAIN
TO CONV.
FROM TC70
LOW VOLTAGE DETECT
ONLY
TP48C90
PJ48C90
TP55C80/81
PJ55C80
Q390 TA75558S V-AMP
Q391,Q392,Q393,Q394
SAW TOOTH WAVE GENERATOR
Q305 TC74HC123AP V.BLK
VD GEN
HD GEN
CRT PROTECTION
DEF STOP
Xray PROTECT
HEIGHT
V.LIN
H-DRIVE
H-OUT
H.V-DRIVE
H.V-OUT
T461 TFB5070AN
T462 TLN2174
HV REGU
H.V.DETECT
H.V.ADJ
D.FOCUS
D.F.LEVEL
DC BIAS
Q470 TA75558S
V.PARA GEN
V.PARA AMP
Q412 TA75458P
CRT PROTECT
H.BLK GEN
H.SCAN STOP PROTECT
SPOT PROTECT
HEATER
WIDTH
TEST SW1
TEST SW2
TO GREEN DRIVE
TO CONV
L462 TDY7074B(R)
L463 TDY7074B(G)
L464 TDY7074B(B)
90Vp-p
10Vp-p
0.7Vp-p
1.2Vp-p
1080Vp-p
0.8Vp-p
118Vp-p
117Vp-p
2.3Vp-p
1160Vp-p
700Vp-p(H)
1000Vp-p(V)

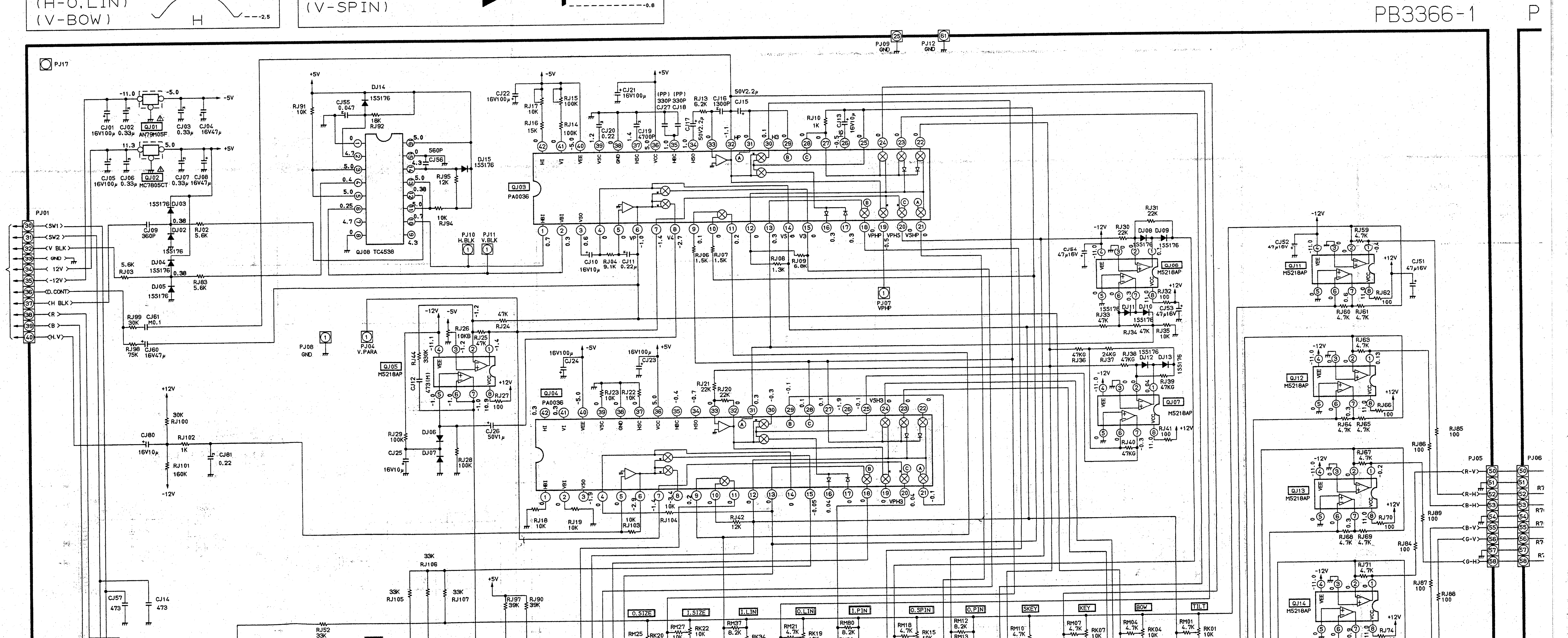
SCHEMATIC DIAGRAM

MODELS: **TP48C50** Chassis No. TAC9390 **PJ48C50** Ch

TP48C51 Chassis No. TAC9390

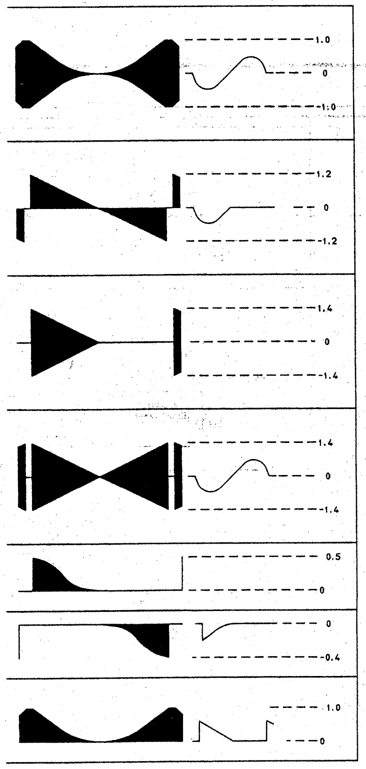


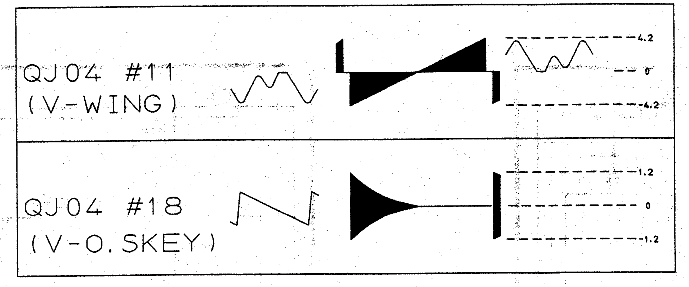
CONV.UNIT
PB3366


PB3366-1
P
PJ17
PJ01
TO H.V
PJ05
PJ06
PJ07 VPHP
PJ08 GND
PJ04 V.PARA
PJ09 GND
PJ12 GND
PJ10 H.BLK
PJ11 V.BLK
QJ01 AN79M05F
QJ02 HC7805CT
QJ08 TC4538
QJ03 PA0036
QJ04 PA0036
QJ05 M5218AP
QJ06 M5218AP
QJ07 M5218AP
QJ11 M5218AP
QJ12 M5218AP
QJ13 M5218AP
QJ14 M5218AP
+5V
-5V
+12V
-12V
O.SIZE
I.SIZE
I.LIN
O.LIN
I.PIN
O.SPIN
O.PIN
SKEY
KEY
BOW
TILT

MODELS: TP48C50 Chassis No. TAC9390 **PJ48C50** Chassis No. TAC9390 (4/4)

TP48C51 Chassis No. TAC9390





NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1,000, M = 1,000,000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.

1/2R : Metal or Metal oxide of 1/2 watt 1/2S : Solid of 1/2 watt
1RF : Fuse resistor of 1 watt 10W : Cement of 10 watts

K = ±10% G = ±2% F = ±1%

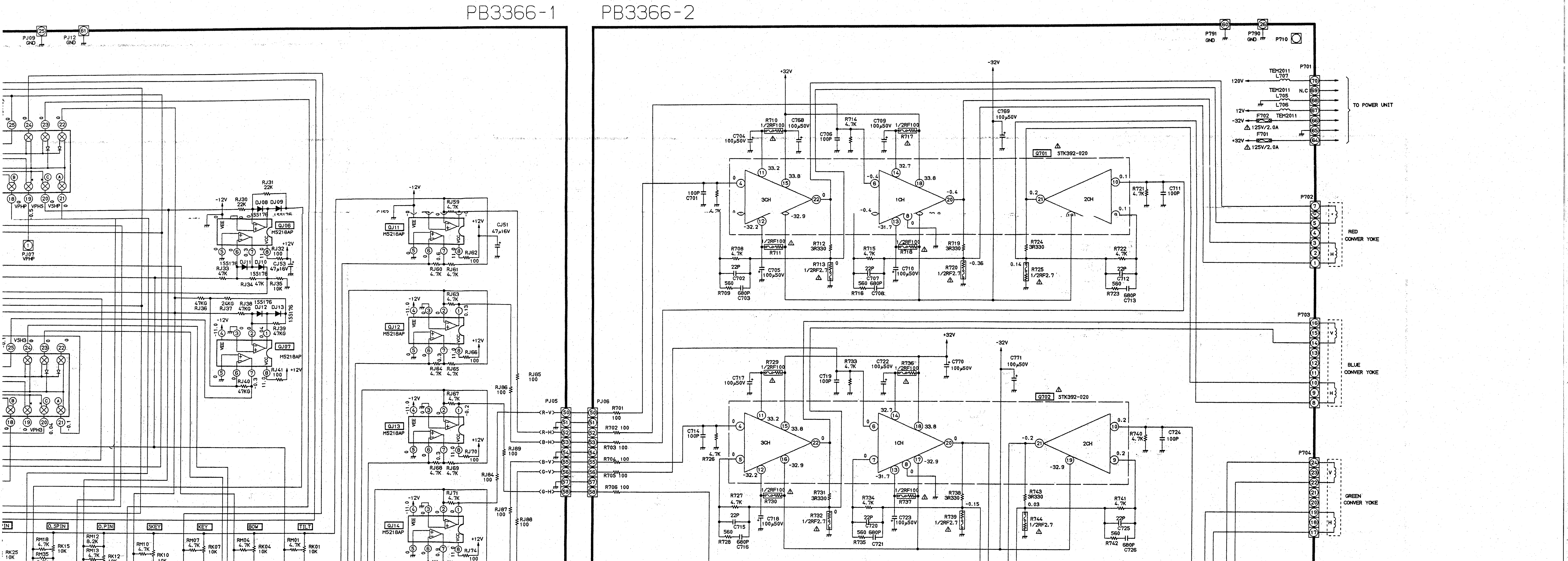
2. CAPACITOR Unless otherwise noted in schematic, all capacitor valuse less than 1 are expressed in μF, and the values more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.

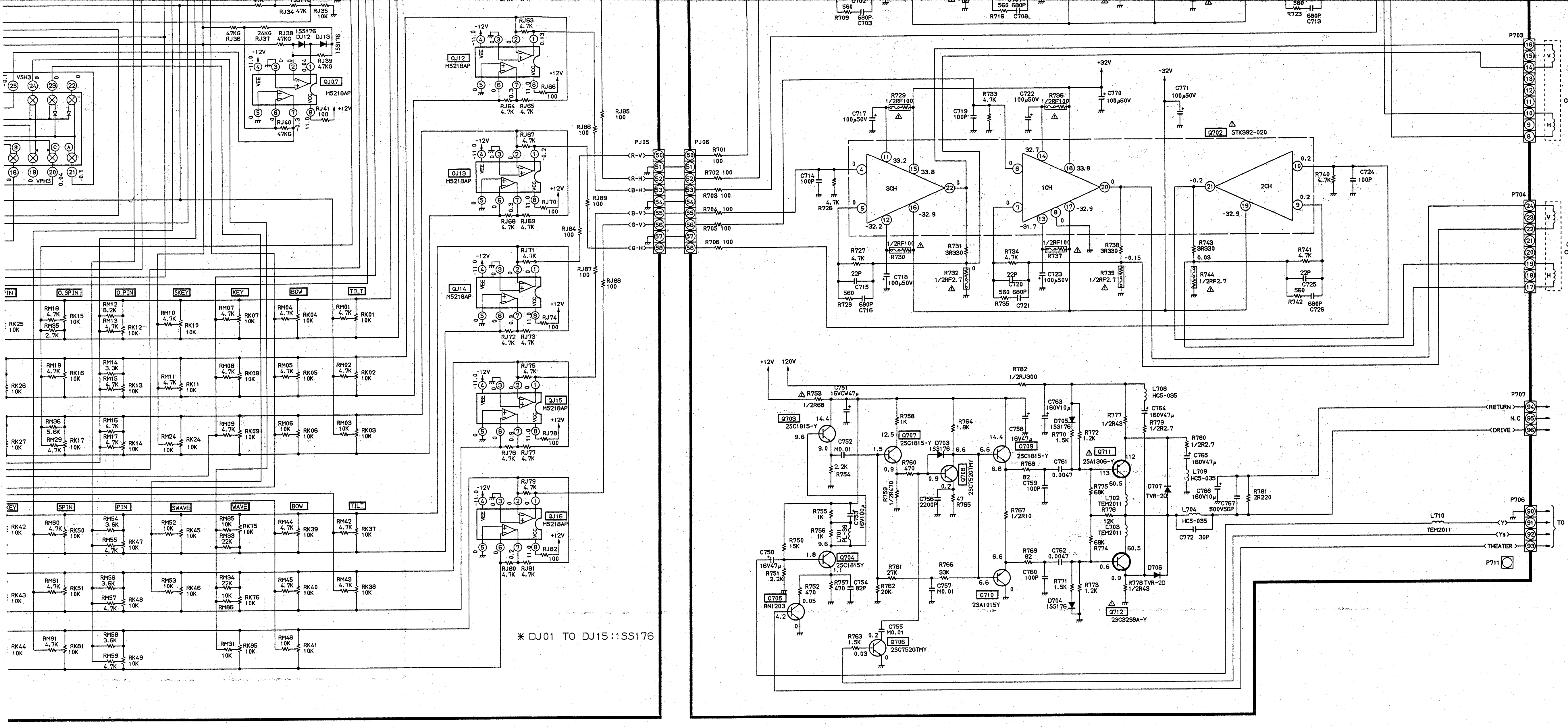
Electrolitic capacitor Mylar capacitor

3. The parts indicated with "⚠" have special characteristics should be replaced with identical parts only.

4. This schematic diagram is the latest the time of copying, so it must be changet in acordance with all informed modification notices.

CONV.UNIT
PB3366


PB3366-1
PB3366-2
P791 GND
P790 GND
P710
P701
TO POWER UNIT
120V
12V
-32V
+32V
TEM2011
L707
L705
L706
F702
F701
⚠ 125V/2.0A
N.C
+32V
-32V
Q701 STK392-020
Q702 STK392-020
3CH
1CH
2CH
P702
RED CONVER YOKE
P703
BLUE CONVER YOKE
P704
GREEN CONVER YOKE
PJ05
PJ06
QJ06 M5218AP
QJ07 M5218AP
QJ11 M5218AP
QJ12 M5218AP
QJ13 M5218AP
QJ14 M5218AP
PJ09 GND
PJ12 GND
PJ07 VPHP
VSHP
VPHS
VSH3
VPH3
O.SPIN
O.PIN
SKEY
KEY
BOW
TILT


PJ05
PJ06
R-V
R-H
B-H
B-V
G-V
G-H
QJ07 M5218AP
QJ12 M5218AP
QJ13 M5218AP
QJ14 M5218AP
QJ15 M5218AP
QJ16 M5218AP
DJ12
DJ13
1SS176
VSH3
VPH3
-12V
+12V
O.SPIN
O.PIN
SKEY
KEY
BOW
TILT
SPIN
PIN
SWAVE
WAVE
Q702 STK392-020
3CH
1CH
2CH
+32V
-32V
P703
BLUE CONVER YOKE
P704
GREEN CONVER YOKE
P707
RETURN
N.C
DRIVE
P706
TO MAIN
Y
Ys
THEATER
P711
+12V
120V
Q703 2SC1815-Y
Q704 2SC1815Y
Q705 RN1203
Q706 2SC752GTMY
Q707 2SC1815-Y
Q708 2SC752GTMY
Q709 2SC1815-Y
Q710 2SA1015Y
Q711 2SA1306-Y
Q712 2SC3298A-Y
D703 1SS176
D704 1SS176
D705 1SS176
D706
D707 TVR-2D
L702 TEM2011
L703 TEM2011
L704 HC5-035
L708 HC5-035
L709 HC5-035
L710 TEM2011
T701 PL-39
✱ DJ01 TO DJ15:1SS176